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ORIGINAL ARTICLES

MISTAKES AND MISCONCEPTIONS WITH REGARD TO THE MODERN TREATMENT OF TUBERCULOSIS.*

J. W. PETTIT, M.D.
Medical Director, Ottawa Tent Colony
OTTAWA, ILL.

The purpose of this paper is very clearly set forth in the title. No attempt is made to discuss the strictly scientific aspects of pulmonary tuberculosis nor give expression to any advanced views, but to show wherein the treatment fails in many instances and why. The opinions expressed are based upon some years' experience, and while this does not entitle me to speak *ex cathedra,* I believe there are many problems connected with the application of the treatment which none of us fully appreciate until we have had some extended experience. In order that we may get a more comprehensive view of the situation, I will first briefly review what has thus far been accomplished in this state. Six years ago, when the tuberculosis propaganda was first inaugurated by the organized medical profession of this state, we were confronted by the popular and to some extent professional belief that tuberculosis was an incurable disease, or if curable, only under certain climatic conditions. This conviction had become so deeply rooted that it seemed a hopeless task to change opinion on this subject. The campaign of education which was then inaugurated has resulted in such a change of public and professional sentiment that now the belief is general not only that tuberculosis is curable, but also that climate is not an important factor. This somewhat sudden, and very radical change in sentiment has resulted in the pendulum swinging too far. The public generally, and, unfortunately, many of my own profes-

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sion, have come to believe that tuberculosis is very easily cured and that by very indifferent methods. We now find ourselves confronted with conditions which threaten to discredit our efforts unless we can keep the enthusiasm which we have so successfully stimulated within reasonable bounds.

Marked apathy and hopeless indifference has changed to extraordinary zeal, and as is often the case, those who have been among the first to advocate certain measures, which we know to be of value, find ourselves obliged to take a rather conservative position lest the extravagant claims made by our converts shall result in a reaction of sentiment and a consequent unreasonable prejudice against methods of treatment, which, when rationally used, are of infinite value to thousands of sufferers. In this somewhat conservative position I find myself at present, and while not wishing to be regarded as abating my enthusiasm for sanatorium treatment, I want to sound a note of warning against the extravagant claims which are being made by many who have only superficially studied the subject.

I wish in this public manner to make acknowledgment of what we owe the press for their assistance in this great crusade, without whose assistance we could have accomplished but little, yet the flaring and exaggerated statements which often appear in the press of what has been accomplished are often such as to make the judicious grieve. Exaggeration of the facts only serves to weaken the cause in the end, for the misguided individuals who rush to the sanatorium for aid in the hope of healing a far-advanced lesion, meet with disappointment in the majority of cases. In the bitterness of their disappointment they and their friends are quite apt to denounce the whole system as a fraud, simply because they have been misled by the false statements of those who are not familiar with the facts, and in spite of the protests of those who are doing their utmost to correct these mistakes and misconceptions.

The fundamental principles of treatment and the agencies employed are so generally accepted that these need not be discussed. The agencies used are so familiar that it has led to a prevailing impression that the treatment is very simple and easy, hence requires no particular skill in its application. This has led to much confusion and many disappointments, and unless these mistakes and misconceptions are corrected it will inevitably bring the treatment into undeserved disrepute. Now is the time to sound a note of warning. If we wait until the evil consequences of our mistakes are upon us it will take a long time to re-establish confidence in a system of treatment which, when properly applied, is, for the present at least, the only hope for the consumptive. It will be a calamity if the magnificent enthusiasm behind this crusade which it has taken years to evolve and concentrate shall be a mere *brutum fulmen,* as it will be unless the plans in which it finds expression produce promised results. I wish therefore to call attention to the conditions under which we are now working and the exaggerated expectations as to results, and point out if possible how these may be corrected.

Experience has demonstrated very conclusively that the sanatorium provides the only reasonably certain method for effecting a cure in a large majority of cases. Its value is beyond that of any other method known, since in it we are able to combine every agency required for treating our patients successfully. The object of the sanatorium is to systematize and perfect the treatment in such a way as to give the patient the advantage of every detail, however small, which will tend to keep the balance in his favor. It means a systematic, regulated life, under rigid discipline and routine; the constant watchfulness of every symptom, not by the patient himself, but by well-trained nurses and physicians of experience. The constant supervision of the patient is the most important point in which sanatorium treatment must necessarily differ from that adopted by the general practitioner. It is not so much medical *treatment,* as this is ordinarily understood, as medical *supervision,* of which the patient stands in need. Living with the patients, adopting their mode of life, having his meals in common with them, the physician is enabled to individualize the treatment. He studies the patient from every aspect, and his life is laid out in detail. There is a fixed hour for rising and retiring. He is told what time is to be spent in walking and resting. He is told what to eat and what to avoid. Regulation of the body functions, proper attention to clothing, hours for temperature observations, special care in the disposal of sputum, and that he is in no danger to himself or others when this is properly done. Experience has abundantly demonstrated the importance of the sanatorium as a desirable and even essential institutional center for the conduct of effective hygienic-dietetic measures, and as an educational school for rational living. Fads and fancies have gathered about the so-called "open-air" treatment, and impossible claims have been made by inexperienced enthusiasts as to the almost miraculous efficacy accruing from sanatorium residence. In spite of all these exaggerations and failures, there can be no doubt but that the maintenance of a strictly hygienic course of living offers the best means known to modern medical science for dealing effectually with tuberculosis. The difficulty in bringing early cases to seek medical advice, and the often unavoidable delay of admitting patients, the financial and other obstacles to continuing treatment for a sufficient period, the impossibility in many cases of permanently reforming the habits of living and securing healthy conditions for the conduct of suitable work, the failure to maintain medical after-care, make it astonishing that sanatorium results are as good as they are, and is added proof of the strong tendency of tuberculosis to a recovery even under adverse conditions.

The disease is chronic, and the treatment consequently a long one. It is most exacting as to details, and the best results are secured only by those who are familiar with the varying types of the disease and all the minute details of the treatment. In other words, the patient must be under close observation all the time, and this can be best secured in a sanatorium. The sanatorium exists because it has been found to be a necessity. It offers the tuberculous invalid the most practical and economical method of fighting his disease and acquiring hygienic education

in its prevention. The conditions of treatment and its limitations are not recognized, however, hence the necessity for a better understanding of the situation in order to achieve the best possible results.

The four factors which at present tend to discredit the treatment are: 1. The large percentage of hopelessly incurable cases admitted. 2. The popular belief that a cure can be effected in a few weeks. 3. The failure to recognize that the patient is usually more of a problem than his disease. 4. The attempt to carry out the treatment in the home.

Early Diagnosis.—No factor in the treatment is more essential to success than an early diagnosis. When we speak of the curability of this disease as applied to a large majority of cases the statement pre-supposes an early diagnosis. The opinion prevails that those admitted to sanatoria if not incipient, at least come within the easily curable class. This is far from the truth, as shown by the fact that in the institutions in this country there is an average of only 10 per cent. incipient, of which 90 per cent. are curable; 60 per cent. advanced, of which 50 per cent. or more may be cured; and 30 per cent. far advanced, of which only 2 or 3 per cent. are curable. These are the conditions under which the sanatoria are working, and will account in part for the many failures which must be charged up to them. While it is true that a much larger percentage of the two latter classes may be cured, this can only be accomplished by an expenditure of time, courage and money out of all proportion to what many patients can bring to the task. The reason for this condition of affairs is apparent. We have so recently emerged from that long night of despair, which until recently overshadowed the consumptive, that we have not yet had time to educate the public to the necessity for an early diagnosis, and the medical profession how to make it. In the meantime, the sanatoria have been compelled to take many undesirable cases. This is what they should do, but it should at the same time be understood that by reason of this fact the present results must not be accepted as a criterion of the possibilities of the treatment. In estimating the value of the sanatorium treatment, three very important considerations must be kept in mind. The stage of the disease on entrance, the time under treatment, and the environment to which the patient returns.

Time Element.—Tuberculosis, even in its earliest stages, is not susceptible of a cure under the most ideal conditions within a few weeks. An incipient lesion requires for its eradication not less than two years, although the patient may to all appearances be perfectly restored to health in a much shorter time. Since the treatment of tuberculosis has for its object the arrest of the process, and that arrest is practically fibrous encapsulation, it is all important that the arrest should be so perfect that under proper living and hygienic surroundings there will be little or no danger of a relapse.

As to the time required after arrest, before we can say our patient is cured, there is no stated period. It depends upon many factors, such as the extent of the lesion, the virulence of the bacilli, the recuperative powers of the patient, together with his mode of life and general surroundings. Experience has demonstrated that an average of six months'

institutional treatment in early cases usually suffices to place a patient on the safe side, so that with a little help now and then from his family physician he may be trusted to look after himself. In advanced cases, the patient should be warned that more time will be necessary to accomplish a good result. It is a mistake to put a time limit upon the treatment in advance, and when this is done often leads to such disappointment as seriously to handicap the patient in his struggle for health.

The prevailing opinion seems to be that the tuberculous invalid has only to go to a sanatorium for a few weeks to be cured. Three months is the time usually designated. This advice is very misleading. All the treatment amounts to with many of the short-stay patients is simply to carry them to an arrest of the active symptoms which deludes them into a false sense of security, and for the time deceives them, their friends and the public. These are the so-called "cures" which in the near future will be collected by some statistician, who will from the history of such cases prove the instability of the modern treatment of tuberculosis and the consequent failure of sanatoria to produce permanent results.

The percentage of relapses is in direct ratio to time of treatment. Those remaining a few weeks, especially if advanced, as most of them are under present conditions, derive but little permanent benefit. No matter what gain the short-stay patient makes, relapse sooner or later is the rule, while of those discharged as apparently cured a very large majority prove to be permanent cures. This is shown by the reports of the leading sanatoria the world over, the results being uniformly the same in all under like conditions.

I quote from the last annual report of a leading sanatorium in this country:

"Of late, greater insistency has been laid upon the advice given to patients to remain in the sanatorium for a longer period of residence in order to insure better results of treatment. With this in mind, it is interesting to note that during the past year of the 158 cases reported upon and who represented upon their admission to the sanatorium all stages of the disease, 21.52 per cent. were discharged 'apparently cured' in an average duration of residence of 43.09 weeks, as against 18.80 per cent. of 'apparent cures' in 1907, in an average duration of residence of 31.44 weeks, and 16.45 per cent. of 'apparent cures' in 1906, in an average duration of residence of 25.26 weeks. This increase in the percentage of 'apparent cures' is not so much attributable to improved methods of treatment as to the longer stay in the sanatorium. This is particularly noticeable in the class of twenty-five incipient cases among whom we were able to discharge 72 per cent. of 'apparent cures' during the past year, with an average duration of residence of 25.72 weeks, as against 46.43 per cent. of 'apparent cures' of incipient cases in an average duration of residence of 18.78 weeks last year. The same increased duration of residence will be found in connection with the favorable results throughout this report, and is certainly an argument for a longer duration of residence in the sanatorium." It will be noted that the addition of seven weeks in the incipient class almost doubled the percentage of "apparent cures."

The so-called "educational method" of sending patients to sanatoria for a few weeks to "learn the treatment," and then attempt to carry it out at home, is not only misleading many patients, but seriously handicapping the work of the sanatoria. Such advice is as pernicious as it is misleading, and shows that those who give it fail to appreciate the seriousness of the disease and the difficulties in applying the treatment. The argument is plausible and the attempt a laudable one, but it is unfortunate that the plan is a failure. This attempt to make our present very meager sanatorium accommodations meet the demands of the situation discredits the sanatorium without aiding the home treatment. It were far better to direct our energies to the building of more sanatoria than to discredit the efforts of those now in existence by insisting upon a policy which physicians in charge of these institutions know is impossible of accomplishment.

The most striking illustration of the failure of the so-called "educational method" comes from Germany, where in an attempt to enlarge the usefulness of the public sanatoria, they restricted the residence of strictly incipient cases to a few weeks. The experiment was tried in many thousands of cases with a mortality of 75 per cent. Whereas 75 per cent. were cured by six months' treatment. This is practically the experience of sanatorium physicians everywhere, and those who assume the responsibility of telling a patient he will be cured by a short stay should understand the folly of such a course. But what of the patient who for financial reasons cannot remain in the sanatorium long enough to effect an apparent cure? No hard and fast rules can be laid down to follow in all cases. It must be admitted that the short-stay patient does get some benefit and that his chances of recovery are improved somewhat. Whatever else may or may not be done, he should be told frankly the time that will probably be required, and that if he is not able to comply with this condition then he must decide for himself whether he desires to enter upon a short course of treatment which will improve his chances of a recovery, but not sufficient to effect a cure. No patient should be encouraged to enter upon the treatment without an understanding of all the conditions and a full determination to carry them out. There is no short cut or royal road to a cure in tuberculosis. The conditions are exacting, and in nothing more so than in the time element, and attempts to compromise or depart from well-established methods usually results disastrously.

It is a serious matter to advise a patient with tuberculosis, and I fear we do not always appreciate our responsibility. The advice to go to a sanatorium for a few weeks without being fully advised and properly equipped is as irrational as the advice to go west and rough it, or to stay at home, live out of doors, drink all the milk, and eat all the eggs possible. To illustrate what exaggerated ideas are entertained as to the ease and simplicity of the treatment, it is only necessary for me to state that many requests are made by letter for information as to how to conduct the treatment at home without even the aid of the family physician. In one instance an Episcopal bishop of a neighboring state came to me for advice

as to how to treat his son at home. He not only expected proper directions, but was in such haste to get back on the next train that he had only a few minutes in which to get this information. Such mistakes and misconceptions lead to farcial attempts that would be ludicrous if they were not so serious. It is as pathetic as it is disheartening to see the vain attempts to accomplish a possible end by such impossible means.

The Patient.—In the discussion of this subject the attitude of the patient is rarely ever, or at least only incidentally, regarded as a factor. We approach the treatment of the case entirely from the physical side, and on the assumption that the patient has an intelligent appreciation of his danger, and that we can count upon his cooperation. Herein is where we err, and that seriously. The average patient is more of a problem than his disease. There is a wide difference between treating a patient who is consciously sick and one who is not; one who is helpless and must obey our directions and one who is not. The patient with pneumonia, typhoid fever or a broken leg is constantly reminded by his suffering and helplessness that he is sick; therefore is ready and willing to accept the advice and assistance of his physician. With tuberculosis it is radically different. As a rule, he does not suffer, therefore is not consciously sick, which leads him to do many things to his detriment because he is not constantly reminded by his pain and helplessness as in the case of acute disease. He estimates his danger according to his own interpretation of the severity of the symptoms. A slight hemorrhage from which there is no particular danger will strike him with terror, while a high fever, rapid pulse or other really dangerous symptom he regards lightly. Exuberance of spirits when he is approaching convalescence leads to excesses which are innocent enough under normal conditions, but apt to be injurious and not infrequently fatal when indulged in by the tuberculous patient. We are constantly reminded by our patients when cautioned against indiscretions which experience teaches us are dangerous, that there can be no risk because they "feel so well." The patient is guided by his feelings in everything he does, which makes him difficult to control. In no disease perhaps is the patient inclined to be more erratic and do irrational things than in tuberculosis. Many for a time make a good fight, but for lack of conservative judgment, and on account of over-confidence, what seemed to be certain victory is turned to a sudden defeat. When really ill, he is brave. When convalescent, he is brave no longer. It seems to be characteristic of the tuberculous patient to take risks. If two courses are pointed out to him, one safe and reasonably certain, and another shorter but involving hazardous risks, the average patient will take the shorter course. This is a factor which should always be taken into account in dealing with the tuberculous invalid. It is a perfectly natural, though none the less fatal, tendency on the part of the afflicted to choose at almost any risk the shorter course to health in preference to the longer but more rational avenue—a tendency to combine the maximum of pleasure and comfort with what is at best a difficult struggle. With little or no knowledge of the strategy of the common foe he attempts to command his own forces, and for some rash act of foolish

bravery or lack of judgment what might have been a victory terminates in disappointment and defeat. This is due to his characteristic optimism and egotism, and is one of the great obstacles to successful treatment. It is one of the hardest lessons the consumptive has to learn that a cure of his disease cannot be attained by way of the primrose path—that it involves sacrifice of much of what he deems essential to his happiness, or even to his tolerable existence, and that these sacrifices must be made voluntarily, and even enthusiastically if he hopes to make them bear fruit. It is very difficult to impress him with the gravity of his position, and especially during the incipient stage or when convalescing. While it is a very painful and unpleasant thing to be sick, its dangers do not compare with the dangers of getting well. Anybody can be sick, but it takes a wise, patient and careful person to get well successfully. The dangers of getting well are oftentimes greater than those of being sick. This is a fact which is not usually appreciated until the patient has by his own folly and blundering made mistakes which often do irreparable damage and oftentimes cost him his life. The average tuberculous patient does not want to get well. That is to say, he does not want to pay the price. He will gladly pay the price in money, but not in courage, self-denial, patience and all those other elements of character which are even more necessary than money. These he must supply for himself, and without these characteristics all else that may be done will avail nothing. Character plays such an important part in the treatment that it is reasonably exact to say that the weak mercurial patient who does things half-heartedly, who is constantly vacillating between duty and desire, or who does his duty only under the spur of fear, is almost sure after he is fairly on the road to recovery to undo in a day or week all he has gained in months. On the other hand, the patient of strong character has a great protection against relapses. He only needs to be reminded of dangers to avoid them. When told to lead a regular life, deprive himself of pleasures and avoid dissipations, he never murmurs or flinches, but accepts the situation gracefully and cheerfully. The result is he gets well easily and remains well. Character is such a determining factor that by its aid the desperate case may get well, while one with less determination in the incipient stage will not. Indeed, it may be said that it is only the patient of strong character who does get well when the disease is well advanced. It is not possible to do more for a patient than he will accept. The wisest advice will avail nothing if he is not sufficiently impressed with the importance of proper living to put into practical operation the advice given. No institution or system of treatment can supply deficiency of character in a patient who is weak or vaccillating. Temperament has also much to do with the success of treatment. The sanguine hopeful patient usually does better than one of a lymphatic or despondent temperament. A patient who doubts or looks upon the gloomy side of life, enters upon the treatment half-heartedly, rarely does well. He expects to do badly, and usually does as he expects. On the other hand, the patient of sanguine temperament is determined to get well; is pleased with each step in

his progress, aims high and strives hard to accomplish his purpose; therefore nearly always does well. Nothing is too hard for him. He is ever ready to make an extra effort when an emergency arises. He comes through the difficulties, if not completely victorious, at least without much damage. In making a prognosis in any case the character and temperament of the patient must be reckoned as important factors.

Home Treatment.—Another serious obstacle is the assumption that the treatment can be carried out successfully in the home. All the reasons usually adduced are so very plausible that any attempt to combat them by argument is useless. The facts of experience, however, are all against this method, and is the only reply that can be made when this phase of the subject is under discussion. Prof. Clifford Allbutt, in an address delivered at the British Congress on Tuberculosis, in contrasting the relative merits of the sanatorium and home treatment, said: "The method was worked out in a sanatorium created for the purpose. It has been tested and perfected in the sanatorium, and if it is ever carried on outside it can only be by bringing the skill and the conditions of the sanatorium into the home. I would look with little confidence on the home treatment of a phthisical patient by the physician unversed in the practice of a sanatorium. It is as it were to tell a boy at home to read his Cæsar, his Xenophon, a little Euclid and algebra, and pat him on the head, tell him to be good and industrious and promise to call in a week or ten days to see how he has gotten on." This is the whole matter in a nutshell. The youth who studies at home certainly has a better time than he who goes to school, and has constantly over him a competent instructor to teach him when, how and how much to study, hears his recitations, commends his successes and checks his mistakes, but in the end it is inevitable, except in rare instances of individual devotion, which youth best succeeds. To my mind this analogy is quite to the point. As for bringing sanatorium conditions into the home, that, of course, can be done, but it must be by converting the home into a sanatorium. A hospital with properly trained physicians and nurses with the appliances and equipment for all details of treatment and all possible contingencies, is to-day recognized as the only rational method of treating the vast majority of diseases. Properly equipped sanatoria should, for substantially the same reasons, be recognized as indispensable to the curative treatment of tuberculosis. Patients can be cured in their own homes, but even under the best and most favorable surroundings these cures are relatively few as compared with those effected in a sanatorium, and are apt to be but a temporary hemming-in with a wall of fibroid tissue of a few colonies of the invaders only waiting the first available opportunity to break down the cordon again and attack the tissues of their host. Moreover, sanatorium treatment is infinitely more economical because it takes much less time. It is not too much to say that as much improvement can be made in a week under sanatorium treatment as is usually possible in a month under the most careful treatment in private homes under the most favorable circumstances. The patient who undertakes to carry out the treatment

in his home is not only constantly exposed to the temptations to do things which he sees done by those in health, but does not get the support of his friends when convalescent, because they cannot realize that a tuberculous patient is not well simply because he looks well; hence is exposed to many temptations to which he almost inevitably yields. One important factor in the treatment which cannot be had in the home is the effect of the example of other patients and of the *esprit de corps* which is developed among them, both of which are powerful factors in sanatorium results. However intelligent and purposeful, determined and obedient the patient may be, he will lose much in not having the stimulus which is obtained from living with other patients who, like himself, are seeking to recover health, and whose example will constantly urge him on to the proper life. Those who have handled many patients together know the great assistance which is obtained from the rivalry between them in taking the cure faithfully; the brace to the weak of the example of others; the encouragement to the discouraged from the good results in other cases, and the mutual assistance of that spirit which animates them all. At a sanatorium the patient readily submits to the necessarily rigid discipline because everybody else does, while in the home he does not. At a sanatorium a patient is removed from all sources of excitement, and for these and many other reasons, trivial in themselves, but together of importance, a patient's chances of recovery are many times greater than in his own home.

These suggestions may strike many of you as superfluous and very commonplace, but if we do not take into account these important considerations our efforts are of little or no avail, and no one knows this better than the physician who has had an extended experience.

In conclusion permit me to add that it is a mistake to estimate the value of the sanatorium simply from the standpoint of the number of cases cured. This is too narrow a view. The ideal result, of course, is a cure, but this is not always possible. Where it is not, the result may be an arrest. This prolongs the life and usefulness of the individual months and sometimes years, and in many cases an ultimate cure is accomplished. Where this is not obtainable an improvement which prolongs life for a shorter period than does an arrest, and not a few even of this class of cases end in a cure. In any and every event the patient is removed as a source of infection and returned to his family with an education as to preventive measures which makes him harmless to his family and friends. Every conscientious patient goes forth from the sanatorium with a practical knowledge of tuberculosis and how to prevent its spread. It is unquestionably the most far-reaching and efficient means of attacking the tuberculosis menance, but there are many defective methods which must be corrected before its greatest possibilities will be attained. There is not a single obstacle, however, which cannot be more or less easily removed when we have a clearer understanding of the situation.

PREVENTION OF TUBERCULOSIS.*

CHARLES J. WHALEN, M.D., LL.B.
CHICAGO

Of all diseases common to man, consumption is the most wide spread and the most deadly. In Illinois, in 1908, over one death in every three between the ages of 20 and 30 was due to consumption, and over one death in every four between the ages of 30 and 40 was due to consumption. Every time the clock strikes the hour, some one in Illinois dies of consumption; one every hour; 24 every day; 750 every month, and 9,000 every year.

Autopsy statistics disclose a vast discrepancy between the great frequency of post-mortem evidence of tubercle infection and the rate of mortality attributable to the disease itself.

Naegeli has shown that the probabilities are that we are all tuberculous, and that the practitioner has only to decide whether tuberculosis is latent or progressing. The vast majority of observers place the estimate at from 60 to 70 per cent.

No discourse on prevention of tuberculosis would be complete without proper consideration of all its etiological factors. In its etiology, tuberculosis is a parasitic disease *par excellence*. The parasite is the bacillus tuberculosis discovered by Koch in 1882. Without its presence there is no tuberculosis; therefore, unless the organism enters the system in a living state, it is not dangerous. Tuberculosis can only be developed by constant heat at a temperature such as that of the animal body. The bacillus has an extraordinary capacity for adapting itself to the various tissues of the body. From the brain to the bones there is scarcely a part of the anatomy where it cannot get a footing. While the microbe is the incidental agent, multiple and varied elements enter into the causation of tuberculosis *per se*. Back of the bacillus are causes which are operating to produce malnutrition and lowered vitality.

The candidates for tuberculosis often show a distinct morphology of the body. There are two fairly distinct types which are especially liable to develop tuberculosis. The one in its most characteristic expression is the florid, sensitive person of nervous temperament with long, narrow, flat or cylindrical thorax, supraclavicular and infraclavicular spaces depressed, Louis' angle pronounced, the scapula-winged; feeble constitution, skin thin and transparent, superficial veins visible, delicately chiseled features, oval face, fair fine hair, large light lustrous eyes, eyelashes long and delicate with arched brows, small bones, slight graceful figure, tapering fingers with long almond-shaped nails. The stigmata of scrofula are often present and also muscular dystrophies.

The other type finds its most complete example in the sluggish, mentally inferior immigrant from southern Europe, with high cheek bones, irregular features, rough, thick skin, sallow complexion, large, ill-shaped

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hands with clubbed finger tips and nails of marked convexity, coarse dark hair and thick, large bones. This class is not so well defined perhaps as in the former; both may appear to be somewhat fanciful, and there are, of course, many cases belonging to neither. The coincidence of a moderate number of these characteristics in one individual is sufficient ground for suspicion that he is a victim, directly or indirectly, of the bacillus of Koch or its toxins. Mariani mentions, in addition to the body changes, three signs which can aid us in recognizing the existence of an early stage of the disease at a time when it is possible to prevent its extension. 1. The general condition of a child who grows thin and pale without an appreciable cause and whose muscles become flaccid, and for which condition his growth or school does not give sufficient reason. 2. The presence of children of the micropoliadeny of Legroux. 3. The hypertrophy of the tonsils and the presence of adenoids in the nasopharynx of a tuberculous nature, as Dieulafoy has demonstrated, and which constitute very often the first stage of a cervical glandular tuberculosis destined to extend to the lungs.

The occupation of a patient may to some extent create a presumption in favor of the existence of tuberculosis. The disease is apt to develop in persons who follow sedentary pursuits amid insanitary surroundings or exposed to the inhalation of dust and unwholesome vapors. Printers, weavers, stone cutters, knife-grinders, metal workers, factory operatives, tailors, tobacco-strippers and packers, workers in wall-paper, dyers, painters and cigar-makers are occupations frequently noted as etiologic factors in tuberculosis.

Race does not appear to be a very important factor in the occurrence of tuberculosis, except that in a general way people coming from warm, equable climates to our variable one are apt to suffer. Mulatto negroes from the tropical West Indies, Italians from about Naples and Sicily, and Chinese coolies from the south of China, near Canton, are more apt to develop the disease than immigrants from northern Europe.

Heredity. The influence of heredity is still incontrovertible, although less potential than was held previous to Koch's startling discovery. Direct hereditary transmission of the tuberculous germ from parent to child is of exceedingly rare occurrence. A careful consideration of the subject of heredity in tuberculosis shows that the disease in infancy is indirectly due on the one hand to either a hereditary or acquired predisposition, and directly on the other hand to a postnatal infection, and that father or mother transmits to the offspring not tuberculosis *per se*, but a predisposition or less resisting power to the invasion of tubercle bacilli. In this connection the point of greatest practical importance is that the immigration and lodgment of bacilli are distinctly favored in a predisposed organism as compared with one that is perfectly normal, hence this hereditary influence when clearly present is not only of etiologic, but of diagnostic importance.

Since the discovery of the bacillus, much reliable data had been obtained as to the way in which the disease is disseminated. Nearly all authorities at the present time agree that the contagion is carried mainly

through the air, the same as in scarlet fever, measles, pertussis, chickenpox, variola, influenza, pneumonia of various kinds, diphtheria, epidemic cerebrospinal meningitis, acute poliomyelitis, acute articular rheumatism, arteriosclerosis, acute nephritis and pyogenic bacterial infections, all of which are now known to be air-borne infectious diseases.

How, then, does tuberculous infection enter the body? Does it enter by the skin? Probably never without a solution of continuity. Does the infection enter by way of the alimentary tract? No, except in very rare instances. Tuberculosis of an intestinal or gastric origin is seldom met with.

This brings us to the question that has been causing a great deal of discussion among physicians and laymen alike, and upon it hinges partly the eradication of the disease, namely: Is animal tuberculosis communicable to the human subject? As the result of pathologic investigations some doubt has been thrown on this plausible theory by various writers.

You will remember the intense interest that was excited by Koch, the discoverer of the tubercle bacillus, in his address at the London Congress for tuberculosis a few years ago. He there stated that bovine and human tuberculosis were due to absolutely different types of bacilli, and were not interchangeable, and that it was not necessary for man to protect himself from the tuberculosis of cattle.

Is man susceptible to bovine tuberculosis?

It is impossible to give the question a direct answer, for the reason that experimental investigation of it with human beings is out of the question. Indirectly, however, we can try to approach it. It is well known that the milk and butter consumed in our great cities very often contain large quantities of the bacilli of bovine tuberculosis in a living condition. The inhabitants of such cities consume daily such living and perfectly virulent bacilli of bovine tuberculosis and unintentionally carry out the experiment which we are not at liberty to make. If the bacilli of bovine tuberculosis were able to infect human beings, many cases of tuberculosis caused by the consumption of alimenta containing tubercle bacilli could not but occur among the inhabitants of great cities, especially the children.

That a case of tuberculosis has been caused by alimenta can be assumed with certainty only when the intestine suffers first; that is, when a so-called primary tuberculosis of the intestines is found. But such cases are extremely rare. Koch himself says among the great many cases of tuberculosis examined after death, I remember having seen primary tuberculosis of the intestine only twice. Among the great postmortem material of the Charité Hospital in Berlin, ten cases of primary tuberculosis of the intestine occurred in five years.

Behring takes the opposite view. He asserts that tuberculosis in man and cattle is propagated by identical bacilli and that the seeming differences between the human and bovine bacilli result from the capacity of the bacilli to accommodate themselves to the organisms in which they live. He also believes that the infant's diet of milk is the whole source of infection in tuberculosis. He also holds that the bovine tubercle bacillus

is more virulent for man than the human tubercle bacillus. This view, radically different from the opinion commonly held by sanitarians, coming from a man of Behring's weight and authority, compels us to at least investigate the proofs offered by each in support of his theory.

Theobald Smith says that there are some undoubted cases of bovine tuberculosis in children, among whom ingestion does play a more important part than in adults, but that there is at present no evidence that bovine bacilli may be transformed and assume the human type in the human body. De Schweinitz, U. S. Bureau of Animal Industry, has isolated nine cultures from human tuberculosis. By comparing these cultures with newly isolated virulent cultures of bovine tuberculosis, there were found among them two cultures from children which were identical in their cultural and morphologic characters with the bovine bacillus. Salmon has never accepted the existence of two distinct types: he believes that the differences are due to the host, and that both have a common origin.

The Royal Commission in England, in concluding its report, says: "We have very carefully compared the disease thus set up in the bovine animal by material of human origin with that set up in the bovine animal by material of bovine origin, and so far we have found each, in its broad general features and in its finer histologic details, to be identical with the other. We have so far failed to discover any character by which we can distinguish one from the other." The German Commission, and nearly all the French and German bacteriologists, believe that the existence of two types of bacilli is proven. The great majority of American pathologists, most of whom have done experimental work, agree that there are two types of tubercle bacilli, distinct in cultural characteristics, virulence and morphology. The Imperial Board of Health of Germany has given out for publication the report of the committee which has been studying under governmental auspices the relation between human and bovine tuberculosis. From one to two years of experiment and test failed to show any indication of transformation of either of these types into the other type, the attempts to inoculate cattle with human tuberculosis all resulting negatively.

Dr. Moore, in his experience with cattle tuberculosis, has never met with a case of its transmission to man. As regards the transmission of human tuberculosis to cattle, the case is equally strong. There is no instance that he can find where the infection of the disease in man has passed to the animal. He mentions the herd at the Saranac Lake Sanatorium, where there is so much infective material, and where the herd is exposed, if any could be, to infection, and yet it was found free from tuberculosis. Professor Adami presents a similar view and points out that human tubercle bacilli, when inoculated into cattle, tend to become localized, while fowls may be fed on bacilli contained in human sputa with impunity.

Spengler states that in all the cases where he has examined localized tuberculosis of adults and children in whom the disease was not suspected, it was clear to him that the origin was in the bronchial glands

and that the mesenteric and intestinal glands were not affected. In children who died of tuberculous meningitis, tuberculosis of the bronchial glands was never absent. Raw, as a result of an observation of 3,500 cases of tuberculosis, with, in addition, a study of 650 autopsies in such cases, expresses the opinion that human and bovine tuberculosis are separate and distinct varieties of disease and that the human body is susceptible to both.

Ganghofner, after studying the autopsies of 253 children who died of tuberculosis, states that the bacilli of bovine tuberculosis rarely gives rise to human tuberculosis by transmission in the feed. He compared the statistics of human tuberculosis in certain sections with the official data of bovine tuberculosis and tuberculosis of the udder. He found nowhere any parallel between the two diseases. Often human tuberculosis was rife where bovine tuberculosis was scarce and *vice versa*. Koch's claim that the human type will not infect cattle has been disproved by some observers; however, the infection of animals by human tuberculosis has rarely occurred in feeding experiments and has been successful in only a small number of instances after inoculation. Granting that pulmonary tuberculosis may be caused by ingestion as well as by inhalation of the bacilli, we should expect to find a difference in the rate of increase or decrease of tuberculosis of the lungs as compared with other forms of tuberculosis.

Thorn's table shows that in England and Wales, between the periods of 1851-1860 and 1891-1895, there was a reduction in the mortality of all ages from pulmonary tuberculosis of 45.4 per cent., while the mortality from tabes mesenterica under one year of age actually increased 27.7 per cent. for the period referred to.

In Massachusetts for the years first mentioned for the period under 5 years of age, the death rate from pulmonary tuberculosis was 46.3 to 1,000 deaths from all causes. For the two years last mentioned it was but 15.6 to 1,000 from all causes. In the two years first mentioned there were in the same age 70.7 deaths from other forms of tuberculosis to each 1,000 deaths from all causes, and in the two years last mentioned there were 96.2 from other forms of tuberculosis to each 1,000 deaths from all causes; thus, in 40 years there was an increase of 36 per cent. in the forms of tuberculosis other than phthisis in the class under 5 years of age; while there was a reduction of the mortality from phthisis of all ages of about 45 per cent.

In Michigan for the years from 1870 to 1884, inclusive, in the class under 5 years of age, there were for each 100 deaths from consumption 81.8 deaths from other forms of tuberculosis. From 1885 to 1897, inclusive, there were 104.3 deaths from other forms of tuberculosis for each 100 due to consumption. Why this tremendous increase in the mortality from other forms of tuberculosis as compared with consumption at what has been called the milk-drinking age?

Gottstein states that among children in Berlin the mortality of those at the breast is but slightly more than half as much from tuberculosis as among those otherwise nourished. Bovaird, Jr., discusses the experimental work done by American and European investigators and sums up

by saying that it appears that human tuberculosis can be transmitted to cattle, but with difficulty, and it seems highly improbable that such transmission plays any great part in the production of the disease among cattle. Bovine tuberculosis can be transmitted to man, but the evidence that such transmission occurs under ordinary circumstances is extremely scanty and it is highly improbable that such transmission plays an important part in the spread of the disease in man. An important feature in the research work done has been that relative to the infection of children through the intestines, and of this the author says: "It seems that we can still safely say that the greatest weight of evidence is against frequent infection of children through the intestines and that we cannot, therefore, consider that tuberculous milk is frequently the means of conveying the disease." Von Pirquet says of the numerous tubercle bacilli which are swallowed and which proceed through the intestinal canal very rarely one finds a chance to enter the mucosa capable of producing here a primary lesion. In practical pediatrics this route seems to play a very insignificant rôle.

If, as Behring says, the bovine tubercle bacillus is more virulent for man than the human tubercle bacillus, a more virulent disease must result from bovine than from human infection and, moreover, if practically all infections occur in nurslings from infected milk, then the greatest prevalence of tuberculosis should be in the years of infancy and early childhood. Tuberculosis, however, is rare in infancy, as the observations of Westenhoffer, Freebelius, Baginsky, Biedert, Lannalongue, Huebner, and all pediatrists show. Moreover, the mortality increases from birth until about the fifth year and then declines to the age of puberty, after which it again steadily increases. Epstein, in four years, did not find a single case of tuberculosis in the autopsy material of the foundlings' asylum at Prag, where the children were received directly from obstetric clinics without having been associated with tuberculous mothers.

Again, if Behring's proposition be correct that the bovine tubercle bacillus is the chief and practically the only source of infection, the mortality from tuberculosis of children nourished from cow's milk should at least far exceed that of the breast-fed infants; but this is not the case. In Berlin records have been kept of the method of feeding all children under one year who have died of tuberculosis, and the figures are cited by Fraenkel as follows:

In 1899 the total infantile deaths from all causes was 10,933; in 1900, 11,762; in 1901, 11,325; in 1902, 8,927. Of these there received mother's milk exclusively 898, 895, 832 and 733, respectively, of whom there died of tuberculosis in 1899, 11.1 per cent.; in 1900, 8.9 per cent.; in 1901, 4.5 per cent., and in 1908, 5.7 per cent. Of children reared exclusively on cow's milk there died in 1899, 6,631; 1900, 7,305; 1901, 6,983; 1902, 5,246, and, of these, death was due to tuberculosis, respectively, in 79.5 per cent., 70.9 per cent., 63.9 per cent. and 61.1 per cent. From these figures it will be seen that the maximum difference in any one year between the two series is represented by only 0.4 per cent., a fact which does not bear out Behring in his views.

Speck, in order to determine the degree of danger of tuberculous infection in infancy from milk, made inquiry of the various sanatoria for tuberculous patients in Germany concerning the method of feeding of patients up to the third month of life. It was shown that of 4,467 phthisical patients of the sanatoria 3,455 had been breast-fed, or 77 per cent., and 1,012 had received cow's milk, or 23 per cent. Of 259 cases reported by other physicians 181, or 70 per cent., were breast-fed. Jacob and Pannwitz reported 2,921 tuberculous patients; 1,877, or 67 per cent., were raised on cow's milk. Schroeder reports 264 cases; 203 were breast-fed, or 77 per cent., and 61, or 23 per cent., were fed with cow's milk. Servae reports 99 cases, of which 63 received women's milk, or 64 per cent., and 36 received cow's milk, or 36 per cent. These figures Speck has summed up, making a total of 8,010 cases of tuberculosis, of which 5,854, or 73 per cent., were breast-fed children and 2,156, or 27 per cent., received cow's milk. While these statistics represent conditions on the continent, the records of the Winyah Sanitarium at Asheville, N. C., show that 75 per cent. of tuberculous patients have positively stated that they have been breast-fed, 15 per cent. could not make positive statements, and 10 per cent. were raised on cow's milk.

Biedert shows another discrepancy between Behring's theories and the real facts—that in the lower Pfals district there are 182 head of cattle per 1,000 inhabitants, and, according to meat inspection, there are 7.5 per cent. of tuberculous cows. Here the mortality from tuberculosis is 35.9 per 10,000 inhabitants. In the upper Pfalz there are 314 head of cattle per 1,000 inhabitants and of tuberculous cows 17.3 per cent. Here the mortality from tuberculosis is 29.1 per 10,000.

Tenzig cites the statistics of the city abbatoir of Padua, which shows that bovine tuberculosis occurs with rarity. Yet this city furnishes the greatest mortality of all Italian cities from tuberculosis with a remarkable frequency of intestinal tuberculosis. Carter says that the average mortality from tuberculosis in the city of Havana represents more than 21 per cent. of the total death rate, and yet raw cow's milk is never used in Havana.

In Sweden, where for generations nearly all mothers have nursed their children, we find a higher death rate among children from tuberculosis than in certain other countries where artificial feeding is frequently resorted to. Hirsch cites the comparative statistics for four countries as follows: Switzerland, 1.86; Prussia, 2.94; Norway, 2.21; Sweden, 3.5. Babes states that tuberculosis is very prevalent in Roumania, where the children receive no cow's milk. Arthur Meyer says that in England, where milk is used raw much more than in Germany, the tuberculosis mortality is less than on the continent, although Ransome, Delepine, Boyce and others have shown that milk contained tubercle bacilli in large numbers of the samples which they examined. Dr. Vesta shows that in Sardinia and in Sicily, where bovine tuberculosis is almost unknown, tuberculosis in man causes a greater mortality than in England.

Stowell says that at the New York Infants' Hospital, which has 2,500 patients supplied with milk from 28 cows kept on the farm, between the years 1903 and 1907 there were 4,537 patients, of whom 180 died, 18 of

whom died from tuberculosis, a mortality of 10 per cent., which is the same mortality as for the nation, and yet these children have been fed on tuberculous milk, for in 1903 two diseased animals were found and killed. In October, 1907, it was found that out of 30 cattle only three failed to respond to the tuberculin test. Comby, before the International Congress of Tuberculosis in 1905, made the emphatic statement that, from his observation, milk played no appreciable part in the spread of tuberculosis in children.

Sterilized milk is almost universally used for infant feeding in Paris, and, while it has resulted in marked diminution in the death rate from intestinal diseases, yet the mortality from tuberculosis in children has increased. Holt found no cases of primary intestinal tuberculosis in 119 children dying from tuberculosis. Bovaird found two cases in 125 autopsies; Northrup, 3 in 125; Hand, 10 in 115 autopsies on tuberculous children. Baginsky, among 933 cases of tuberculosis in children at the Emperor Frederick's Hospital for Children never found tuberculosis of the intestine without simultaneous disease of the lungs and the bronchial glands. Biedert, in 3,104 post-mortem examinations of tuberculous children, observed only 16 with primary tuberculosis of the intestines.

I could cite from the literature of the subject many more statistics of the same kind, all undoubtedly showing that primary tuberculosis of the intestine, especially among children, is a comparatively rare disease, and in the few cases that have been enumerated it is by no means certain that they were due to infection by bovine tubercle bacilli. It is just as likely that they were caused by the widely-propagated bacilli of human tuberculosis, which may have got into the digestive canal in some way or other, for instance, by swallowing saliva from the mouth. Feeding experiments on animals have shown that after the ingestion of tuberculous material the nodes in the chest may be first attacked and bacilli have been found in the thoracic duct shortly after feeding.

Statistics show that in tuberculosis in children the greatest number of cases occur between the second and sixth year. If tuberculous milk is such a great source of danger, a greater number of cases would appear before the second year. Heyman tells us that in Greenland infants are almost exclusively breast-fed, and yet tuberculosis is so prevalent that it is easier to name those who are free from it than to attempt to report the wide-spread presence of this disease. Cobb shows us that tuberculosis in all its forms is the greatest scourge in China. Nevertheless, the use of milk as a food by the Chinese is so rare that one may practically say they do not use it. Very few cattle are raised by the Chinese and these are mostly used for ploughing.

Professor Asyama states that cow's milk is practically unknown in Japan and that the feeding of nurslings has been only by mother's milk or that of wet-nurses for ritual and religious reasons, yet tuberculosis has been widely disseminated in that country for centuries. The mortality from tuberculosis in Tokio is about one-fifth the total number of deaths from all causes, or twice the death rate from tuberculosis in cities of America.

In Hindustan the people, like the other oriental races, do not use milk to any great extent, yet tuberculosis prevails there as elsewhere. In the Philippines, milk is seldom used, and in Cuba and all the Spanish-American countries the milk is invariably boiled before using, yet we know they have tuberculosis. The Alaskan Indian has tuberculosis to a great and increasing extent, yet he does not use milk of any kind as an article of diet and cow's milk not at all. In the Islands of Jersey and Guernsey the cattle are free from tuberculosis, but the people of these islands do have tuberculosis just about as much as we should expect to find elsewhere under similar environments.

Though the important question whether man is susceptible to bovine tuberculosis at all is not yet absolutely decided, one is, nevertheless, at liberty to say that, if such a susceptibility really exists, the infection of human beings is but a very rare occurrence. I should estimate the extent of the infection by the milk and flesh of tuberculous cattle, and the butter made of their milk, as hardly greater than that of hereditary transmission.

Behring's theory of the milk infection of infancy and the latent tuberculosis of childhood has not many supporters outside his immediate following. It is certainly the feeling of most experimenters that bovine infection is rarely met with in the human subject, but that in the vast majority of instances infection takes place through the respiratory and not the alimentary canal. This view does not imply that intestinal infection with the tubercle bacillus may not lead to pulmonary tuberculosis. There is good evidence that it occasionally does, but there is a wide difference between the view that pulmonary tuberculosis is an occasional sequence of intestinal infection and the belief that it is commonly of intestinal origin.

I repeat now what I said in 1900 (*Medicine,* March), which was before Koch promulgated his theory of the non-transmissibility of bovine tuberculosis to man, and again in 1908 (*Chicago Medical Recorder,* August), namely: While infection from milk may be possible, I believe it to be extremely infrequent, and that the great wave now sweeping over the country which has for its object the destruction of all tubercular milk cows, with the idea that with their destruction tuberculosis in man will spontaneously disappear, is born of the grossest misapprehension of the real facts, and, however much we might desire the examination and condemnation of infected herds of cattle for economic reasons (for a sick cow is not a profitable commodity for the farmer), to demand their wholesale destruction with the idea of immediately exterminating human tuberculosis is certainly putting the cart before the horse, for the more serious source of danger of contracting the disease is left behind. Statistics show that the greatest danger is not from tuberculous milk and meat, but that the chief source of contamination is from ourselves.

Where, then, does this infection gain entrance to the body? It has been proved beyond a shadow of a doubt that the nasopharynx is the road of infection in the majority of air-borne diseases. Our belief in the invasion of the system by the tubercle bacilli through the bronchial route for a long time overshadowed all other theories, but more recent research

shows us that invasion through the lymph channels and blood current occupy a scarcely less conspicuous place at the present time as sources of infection in pulmonary tuberculosis. In the light of our present knowledge we must admit that in some cases at least the bacilli gain entrance into the system through the lymph channels, then to the bronchial lymph glands; from this point they are carried by the blood stream to the lungs, usually to the apex, because of comparative local anemic and retarded lymph flow, which is due to hindered movement from ossification of the rib.

A thorough digest of the research work done on lymphatic infection convinces me that the tonsillar tissue of the throat, because of its peculiar anatomic construction and its topographic relations, is more liable to become infected by tuberculosis than any other part of the upper respiratory tract. In a large percentage of pulmonary phthisis the faucial tonsils become inoculated. In 5 or 6 per cent. of hypertrophied pharyngeal tonsils some form of primary tuberculosis will be found. Tubercular adenitis in the cervical lymphatic develops in the majority of cases from infection originating sometimes in the faucial tonsils, but more frequently in the pharyngeal tonsil. The tubercle bacillus is probably unable to pass through the tonsil without having first overcome the vital resistance of the tonsillar tissue. This latter fact explains in a large degree the morphology of the child with the tuberculous habit. The line of defense against toxins is strong enough to prevent modification of the growth and development of the body.

If the second defenses of the tissue and glands are sufficiently resistant, the disturbances will proceed no further than an enfeebled constitution, which will increase in strength as the years go on. As the secondary defenses weaken by sclerosis of the glands, or through the loss in protecting power or through other agencies which are, like the above, largely problematical in character and functions, the constitutional resistance gradually breaks down and these functional disturbances of stomach, blood vessels, vasomotor centers and respiration make their appearance. And after a more or less prolonged period comes the explosion on the lungs, and we have the beginnings of a chronic and usually incurable pulmonary tuberculosis.

Sputum is the main source of infection. We have shown that in the majority of cases of tuberculosis the disease has its seat in the lungs. From this fact it is to be concluded that the germs of the disease in all likelihood get into the lungs by inhalation.

As to the question where the inhaled tubercle bacilli have come from, there is also no doubt. We know with certainty that they get into the air with the sputum of tuberculous patients. This sputum, especially in advanced stages of the disease, almost always contains tubercle bacilli, sometimes in incredible numbers. By coughing and even speaking it is flung into the air in little drops, that is, in a moist condition, and can at once infect persons who happen to be near the coughers. But it may also be pulverized when dried in the linen or on the floor, and get into the air in the form of dust.

In this manner a complete circle, a so-called *circulus vitiosus,* has been formed for the process of infection from the diseased lung which produces phlegm and pus-containing tubercle bacilli, to the formation of moist and dry particles (which, by virtue of their smallness, can keep floating a good while in the air), and finally to new infection, if particles penetrate with the air into a healthy lung and originate the disease anew. But the tubercle bacilli may get to other organs of the body in the same way and thus originate other forms of tuberculosis.

This being true, measures for the combating of tuberculosis must aim at prevention of the dangers arising from its diffusion. A patient afflicted with the disease should be carefully instructed as to the proper care of sputa, an appeal being made to his instinct of self-preservation by telling him that not only is there danger of infection to others, but that his own condition may be made worse by the inhalation of infective material. He should be specifically told to exercise care to avoid soiling his clothing and linen. Handkerchiefs are not proper receptacles for sputa. When away from home pieces of cloth, or, better, Japanese paper napkins, which are inexpensive, should be employed for this purpose. When soiled they are folded and inclosed in a stout envelop which, with contents, is burned as soon as convenient. At home the cuspidor should have a sufficiently large opening to avoid soiling the sides and should contain either plain water or a solution of a simple disinfectant. Patients should be cautioned against swallowing their sputa. This topic deserves especial consideration. Constipation (with intermittent diarrhea) is found in most cases of pulmonary tuberculosis. It has been shown that bacilli in the sputum may safely pass the impaired gastric secretions, travel the course of the small intestine and be found in the fecal accumulation in the colon and rectum; or that they may pass into the deeper structures or lymph or blood channels through an uninjured mucosa. Reabsorption of bacilli with the products of metabolism and decay in the intestinal tract is a patent addition to the primary infection by causing intestinal tuberculosis. One's first thought might be to consign all persons suffering from tuberculosis of the lungs, whose sputum contains tubercle bacilli, to suitable establishments. This, however, is not only absolutely impracticable, but also unnecessary. For a tuberculous patient is not necessarily a source of infection providing he takes care that his sputum is properly removed and rendered innocuous. This is certainly true of very many patients, especially in the first stages, and all of those who belong to the well-to-do classes and are able to procure the necessary nursing. But how is it with people of very small means? The whole family have to live in one or two small, ill-ventilated rooms. The patient is left without the nursing he needs, because the able-bodied members of their family must go to their work. How can the necessary cleanliness be secured under such circumstances? How is such a helpless patient to remove his sputum, so that it may do no harm? At night the whole family sleep crowded together in one small room. However cautious he may be, the sufferer scatters the morbid matter secreted by his diseased lungs every time he coughs, and his relatives close beside him must inhale

the poison. Thus whole families become infected. Often, under such circumstances, the infection is not restricted to a single family, but spreads in densely inhabited tenement houses to the neighbors, and then regular nests or foci of disease are formed. If we investigate these matters more thoroughly we find that it is not poverty *per se* that favors tuberculosis, but the bad domestic conditions under which the poor everywhere, but especially in great cities, have to live. For, as the German statistics show, tuberculosis is less frequent, even among the poor, when the population is not densely packed together, and may attain very great dimensions among a well-to-do population when the domestic conditions, especially as regards the bedrooms, are bad, as is the case, for instance, among the inhabitants of the North Sea coast. So it is the overcrowded dwellings of the poor that we have to regard as the real breeding places of tuberculosis; it is out of them that the disease always crops up anew, and it is to the abolition of these conditions that we must first and foremost direct our attention if we wish to attack the evil at its root and to wage war against it with effective weapons.

General sanitary measures, such as improved housing, increased air spaces, subdrainage and the corresponding diminution in the dampness of houses, reforms in large establishments, as schools, factories, barracks, prisons, better ventilation and greater cleanliness in shops; protection against dust in the dangerous trades are important preventive weapons. But the sanitary measure having the greatest influence on the spread of the disease is isolation.

Newsholm's report on the isolation of the tuberculous individuals in the advanced state shows the death rate in pulmonary tuberculosis has steadily declined in many countries and large cities since 1860. England shows a decline of 52 per cent.; Scotland, 42 per cent.; Massachusetts, 56 per cent.; Prussia, 38 per cent.; France and Paris show very little decline in the death rate from tuberculosis.

In England there have been for years many consumptive hospitals and the general hospitals have always received such patients; moreover, the number of patients dying from consumption in hospitals has continuously increased from 16 per cent. in 1840 to 30 per cent. from all causes in 1900. In 1899, 2,800 persons died of tuberculosis in the London hospitals. This same ratio holds good in Prussia, where 44 per cent. of all deaths from tuberculosis were in hospitals. In Europe generally more tuberculous patients go to the hospitals now than formerly and remain a longer time. In Paris, where there has been only a small reduction of mortality, the hospitals are crowded and the surgeons complain of the intrusion of tuberculous patients. Such patients remain only a short time, about 25 days, and this short isolation can have, therefore, but little effect on the general infection. The contention that institutional treatment and isolation of advanced cases aid municipal hygiene applies especially to those who are so situated on account of their social conditions as to give infections to others.

In America the rigorous exclusion of consumptives from general hospitals made necessary by the assignment of tuberculosis to the group of infectious and communicable diseases, and the inadequate provision made

for this numerous class in the few existing special institutions, have made the lot of the tuberculous poor in large urban populations, indeed, a hard one. He can still demand a place in the hospitals of Europe, but the doors are shut to him here.

This unkindness will certainly react upon us if we do not soon realize its dangers. We here fear the tuberculous individual, but we do not sufficiently fear the condition of tuberculosis. Every county in this state has provision for the sick poor, but very few of them have made adequate provision for the tuberculous poor. If, as Newsholm has shown in his presentation of the cases, the rate of mortality has declined in so far as a nation has extended its institutional treatment of tuberculosis, the lesson is plain. Almost any infirmary can provide a ward or rooms for the consumptive; such wards should, however, be made attractive because the residence is long there and the prolonged waiting is a sad one.

Notification.—In the combating of all infectious diseases, notification has proved indispensable as a means of obtaining certain knowledge as to their state, especially their dissemination, their increase and decrease. In the conflict with tuberculosis also we cannot dispense with obligatory notification; we need not only to inform ourselves as to the dissemination of this disease, but mainly in order to learn where help and instruction can be given, and especially where the disinfection which is so urgently necessary when consumptives die or change their residences has to be effected.

Disinfection is another measure closely connected with notification, which must be effected when consumptives die or change their residence, in order that those who next occupy the infected dwelling may be protected against infection. Moreover, not only the dwellings, but also the infected beds and clothes of consumptives ought to be disinfected. Louis Pasteur said: "It is within the power of man to cause all parasitic disease to disappear from the world." These words have to no disease a juster application than to tuberculosis. Every intelligent person can soon learn to avert consumption. The houseling hemmed in with heater, gas stoves, coal-oil stoves, growing thinner and coughing constantly, drifts into tuberculosis and dies prematurely.

Live as much as possible in fresh air. If not out of doors, then put the fresh air indoors continuously by open windows. Live where the air is not full of poison from smoke stacks, locomotive gases and housetop chimneys. Avoid shut-up sleeping rooms. Avoid the decay exhaled into crowded air. Abstain from all crowded places where the rebreathed air from promiscuous lungs in large numbers is the only quality of breath drawn into the lungs.

Let me conclude this too lengthy paper by saying that if we are guided in our fight on tuberculosis by the spirit of genuine preventive medical science and utilize the experience gained in conflict with other pestilences and strike the evil at its root then the battle against tuberculosis cannot fail to be successful.

CONCERNING TUBERCLE BACILLI IN THE CIRCULATING BLOOD.*

FREDERICK TICE, M.D.
CHICAGO.

The comparatively recent announcements of Rosenberger[1] that tuberculosis is primarily and essentially a bacteriemia, when viewed from our present knowledge of the disease, appears quite revolutionary. That the bacilli may occur in the blood under certain conditions is a well-established fact, but that it is the rule can hardly be accepted without the most convincing proof. If the findings be definitely established, the discovery will be of far-reaching importance in the etiology, diagnosis and treatment. While accepting the announcements with much skepticism, the possibility of tuberculosis being a bacteriemia must be admitted, for in other diseases the impossibilities of yesterday have become the realities of to-day. Recent investigations demonstrate the importance and probable frequency of infection by means of the gastrointestinal route with or without evident injury to the intestinal wall; the bacilli being carried by the lymphatics to the thoracic duct, then to the subclavian vein and finally distributed broadcast by the blood to the various organs. The acceptance of either hypothesis, the importance of the gastrointestinal route of infection or the presence of the bacilli in the circulating blood, is corroborative evidence of the other.

One of the greatest practical advantages presented by the supposed detection of the tubercle bacilli in the blood is the possibility of an early diagnosis, for Rosenberger not only found bacilli constantly in various clinical forms of tuberculosis, but also in persons apparently healthy without symptoms or signs of local or general involvement, where there is, presumably, a non-virulent form of the organism or a latency, which later, with conditions favorable, may become active. This would seem to supply the demand for a means of early diagnosis not only in the most incipient cases, but even antedating any active infection, the fulfillment of hopes we dare not even dream. In reference to the treatment, instead of a local infection and a general toxemia, as generally accepted, therapeutic measures must be directed against a general infection, which may modify some of our present methods, especially the employment of injections of dead or living bacilli.

While Rosenberger's claim was generally received with considerable reservation, by some it was accepted and by one enthusiast was declared "the most important and far-reaching discovery as to tuberculosis since Koch's own discovery of the bacillus twenty-seven years ago." After a personal examination of a number of preparations in the Rosenberger laboratory, a feeling of pronounced skepticism was replaced by one of enthusiasm, and, being impressed with the possibility of making an early, positive diagnosis, it was decided to investigate the proposed method.

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* Read at the North Shore Branch, Chicago Medical Society, Nov. 2, 1909.

The technic employed was that as first described by Rosenberger, which consists in withdrawing 5 c.c. of blood from one of the veins of the arm and thoroughly mixing it with an equal amount of a 2 per cent. sodium citrate in normal salt solution. This is then placed in the refrigerator for 24 hours and allowed to sediment. Thick smears are then made, allowed to dry in the open air, laked in distilled water, fixed and stained in the usual manner. More recently Rosenberger has modified the technic by making the smears direct from the blood, obviating the use of the citrated solution.

The cases selected for examination, eighteen in number, were all pulmonary phthisis, far advanced, with physical signs and tubercle bacilli in the sputum. All the cases died within a few days of the examination, such being selected as it was considered more probable that bacilli might be found in the circulating blood. Then, too, it was deemed advisable to begin with unquestionable conditions and later undertake the less advanced and incipient forms.

At least two and in most instances four smears were carefully examined in each case, but without detecting acid-fast bacilli in a single preparation. Becoming somewhat discouraged, upon request for a 'typical stained specimen," Rosenberger very kindly sent one prepared from a case of "cervical adenitis," presumably tuberculous. Careful and prolonged search, however, fails to reveal the presence of acid-fast bacilli. Since Rosenberger's announcement, several other reports on the investigation of bacilli in the blood have appeared, a review of which at this time will be of interest and of assistance (see table).

According to the tabulated reports, five record having found acid-fast bacilli in the blood, in some if not all, of the cases clinically diagnosed tuberculosis. Rosenberger unhesitatingly pronounces them tubercle bacilli; Forsyth, Petty and Mendenhall believe they are tubercle bacilli, as they resemble such "morphologically and tinctorially," while Burnham and Lyons, Brem and Dalley do not consider them as such.

In attempting to harmonize these findings and in arriving at some definite conclusions, there are several possibilities to consider. Among these:

1. The determination of the presence and nature of the acid-fast bacilli.

2. The possibility of the bacilli being attenuated forms of the tubercle bacillus.

3. Contamination with some form of an acid-fast bacillus.

4. Artefacts.

That the acid-fast bacilli were found by various investigators cannot be doubted, but that does not imply they were tubercle bacilli. Rosenberger's announcement that he had demonstrated tubercle bacilli in the blood was not new or surprising, but that he found them in all cases of tuberculosis, even in the apparently healthy, was certainly most startling, when viewed from the result of previous similar work.

Weichselbaum, in 1884, demonstrated many tubercle bacilli in the clotted blood from the great vessels in 3 cases of acute general tuberculosis. In the same year Meisils and Lustig found bacilli *intra vitam* in blood removed from a finger tip, and as a result Meisils recommended aspiration of the spleen as an aid in diagnosis. Later Rutimeyer succeeded in one of ten cases in which he aspirated the spleen. Sticker also found a few bacilli in blood removed from the tip of one of the fingers. Liebman claimed to have demonstrated the bacilli in 56 out of 141 blood specimens after the administration of tuberculin.

	Author.	No of. Cases.	Diagnosis.	Results, Positive+ Negative—	Remarks.
1.	Rosenberger[1]	312	Tuberculosis, various forms.	312+	Cultures not made—50 guinea-pigs inoculated; one died in a month with miliary tuberculosis both lungs; three more died within two months, two had tuberculosis; four others showed a few tubercles in the lungs and liver; thirty others were neg. on examination but showed acid-fast bacilli in the blood.
		112	Non-tubercular.	6+	
2.	Forsyth[2]	12	Pul. tuberculosis.	12+	Ten distinct signs and bacilli in sputum.
3.	Bernstein and Fried[3]	10	Pul. phthisis.	10—	Tubercle bacilli in sputum.
4.	Ravenel and Smith[4]	18	Tuberculosis.	18—	
5.	Burnham and Lyons[5]	10	Pul. tuberculosis.	10—	Tubercle bacilli in sputum; 3 guinea-pigs inoculated—all neg.
6.	Petty and Mendenhall[6]	10	Tuberculosis.	8+ 2—	
7.	Brem[7]	26	Tuberculosis.	26+	Five guinea-pigs inoculated—all neg.
		4	Non-tuberculous.	4—	
8.	Dalley[8]	17	Tuberculosis, 15 advanced, 2 miliary.	17+	Seventeen guinea pigs inoculated—all neg.
9.	Schroeder and Cotton[9]	42 Tuberculous cows.		42—	One hundred and four guinea-pigs inoculated—all neg.
10.	Taussig[10]	6	Pul. phthisis.	6—	Four cases with pulmonary phthisis had tubercle bacilli in sputum; fifth case later developed miliary tuberculosis, confirmed by autopsy; sixth case had tubercular peritonitis and sputum positive. Six guinea-pigs inoculated—all negative.
11.	Hewat and Sutherland[11]	22	Pul. phthisis.	22—	Twenty cases had bacilli in sputum.

Ewing, commenting on the subject, says: "Grave doubt was, however, thrown on all previous work in this field by the negative results obtained by Guttman and by Kossel, who called attention to the danger of contamination in such specimens. This method of diagnosis has not been followed in later years. Although Kronig, in 1894, recommended the staining of centrifugated laked blood in doubtful cases of miliary tuberculosis."

1. Amer. Jour. Med. Sc., February, 1909; New York Med. Jour., June 19, 1909.
2. British Med. Jour., April 24, 1909.
3. New York Med. Jour., May 29, 1909.
4. Wisconsin State Med. Soc., June 30-July 2, 1909; Jour. A. M. A., Aug. 21, 1909, liii, 649.
5. Louisiana State Med. Soc., May 4-6; New Orleans Med. and Surg. Jour., October, 1909.
6. Jour. A. M. A., Sept. 11, 1909, liii, 867.
7. Jour. A. M. A., Sept. 18, 1909, liii, 909.
8. Boston Med. and Surg. Jour., Sept. 2, 1909.
9. Arch. Int. Med., Aug. 15, 1909.
10. Interstate Med. Jour., St. Louis, October, 1909.
11. British Med. Jour., Oct. 16, 1909.

Cornet makes the following statement: "Besides all this, it is pure speculation to assume that bacilli frequently circulate in the blood of phthisical subjects; for the actual finding of bacilli in the blood has never been demonstrated beyond the possibility of a doubt, except in acute miliary tuberculosis, and exceptionally during the last moments of life in phthisical patients; and in the latter instance their findings indicated not a harmless circulation, but rather the precursor and immediate cause of death."

While some of the investigators report negative findings, even in positive cases, the most striking feature consists in the uniformly negative results in the inoculation experiments. As tubercle-like bacilli, from one source or another, may occur in the blood examinations, the final crucial test must consist in animal inoculations.

Burnham and Lyons, at the Louisiana State Meeting, May 4 to 6, 1909, read a paper entitled "Experiences in the Staining of Bacteria in Fresh Blood," which was published in the *New Orleans Medical and Surgical Journal* of October, 1909. They report negative results, the first to discredit Rosenberger's work, in 10 cases of pulmonary tuberculosis, with also similar results in the inoculation of three guinea-pigs. To them is due the credit of detecting vibrios in the water, a possible means of error.

Brem, in *The Journal A. M. A.*, Sept. 18, 1909, publishes his findings in 26 cases of tuberculosis, in which the blood examinations were all positive, but inoculations in 5 guinea-pigs were negative. Blood from the guinea-pigs was examined prior to the inoculations, all being positive, but soon after inoculation with citrated blood from patients with suspected tuberculosis one was killed and failed to show tuberculosis; blood from the heart, however, contained acid-fast bacilli. Some months later two more were killed and examined with negative results; while the other two remained healthy.

Brem's experience led him to doubt the validity of the blood examinations, and on Nov. 14, 1908, by using egg albumin as a means of fixing, he was able to detect numerous acid-fast bacilli in the distilled water used. Much credit is due him for detecting, if not the error, certainly one of the chief sources of error in the proposed method and having again directed attention to the existence of acid- and alcohol-fast bacilli other than tubercle bacilli.

James, in an editorial note to the translated work of Cornet, refers to the subject as follows: "The term pseudotubercle bacilli is now generally applied to those micro-organisms which resemble the bacillus only in form and in their failure to be decolorized by acids. They differ from it in their relation to temperature, being less sensitive to this factor, in the fact that their growth is much more rapid, and especially in their feeble pathogenicity. Researches of the past three years have proved that they are more widely diffused than had been supposed. They occur for the most part outside the body, and, though many of them are experimentally pathogenic, but few have been found to be the causative agents of disease. Moeller found them in feces, Benenuti in gangrene of the

lung. Hoelscher inoculated into animals the acid-resisting butter bacillus of Rabinowitsch and Moeller, and found that in pure culture it had some virulence, but did not produce a condition identical with tuberculosis. Kayserling found them in hay, especially timothy, and in seeds; also in cultivated earth and in the products of herbivorous animals, as milk and butter. Moeller found them in human sputum, where they may easily cause errors in diagnosis. He advises the following method of differentiation: Mix the suspicious secretions with sterile bouillon, keep it at 30° C., and if a rapid growth occurs, that is, in two or three days, it is the pseudotubercle bacillus. Lichtenstein has found this organism several times in human sputum, in cases of gangrene of the lung and in catarrhal bronchitis. He believes that it occasionally causes an incorrect diagnosis of phthisis. R. Koch compared the two bacilli with reference to their agglutinations. He took the serum of animals treated by attenuated cultures of tubercle bacillus for purposes of immunity, and found that it agglutinated not only the tubercle bacillus, but the pseudotubercle bacillus; that is, the bacillus of bird and of fish tuberculosis, the Arloing Courmont bacillus, the butter bacillus, and the hay bacillus of Moeller. The reverse of this he also found to hold good; that is, serum from animals immunized from the pseudobacillus agglutinated the true tubercle bacilius. Herr finds the pseudobacillus very widely distributed in earth, cow dung, hay, etc., and concludes that they originate in the earth.

In general, it may be said that the pseudotubercle bacilli are coming to occupy a more and more prominent position in bacteriology, that they may cause errors in diagnosis, and that their recognition is not at all easy. There are cases in which a positive conclusion can be arrived at only after inoculation of the suspected matter into animals. There is an interesting similarity between the pseudotubercle bacillus and those cultures of the true tubercle bacillus that have been attenuated by propagation on artificial media for many years through many generations, a similarity in their morphology and in their feeble pathogenicity, and this similarity is emphasized by the results of Koch's experiments upon their agglutinating properties as above quoted.

Birt and Leishman have recently added another to the list of acid-resisting bacilli, having isolated it from a case of chronic bronchopneumonia. The list now numbers nearly thirty. Abbott and Gildersleeve, and Klemperer, conclude that a close relationship exists between these and the tubercle bacillus. The latter believes that their differences in virulence and in morphology are not fundamental, but have resulted through adaptation to various environments; he believes that the tubercle bacillus may be considered an acid-proof saprophyte that has subsequently become a parasite.

After reading Brem's report, egg albumin smears alone and with sediment from the distilled water, all gave negative findings. Two specimens of distilled water were left exposed to the air of the laboratory for some four or five days and were then examined, but found negative. That the distilled water examinations were negative is not surprising, in view of

the negative blood finding in the cases of tuberculosis. Seven guinea-pigs were injected with blood from a like number of patients with far-advanced tuberculosis with bacilli in the sputum. In each instance 4 c.c. of blood were used, but without producing any result, as the pigs remained healthy and presented no evidence of disease. The same field has been covered by others.

A review of the work up to the present tends to the following conclusions:

1. That tuberculosis as a bacteriemia is not in accord with our present knowledge of the disease.

2. The observations of Rosenberger are not confirmed by previous and subsequent workers.

3. Even his own work and findings are open to serious criticism, as he fails to control his findings.

4. It must be remembered that pseudotubercle bacilli may be present and cause errors in diagnosis. That this may occur is quite probable not only in the blood smears, but also in the ordinary sputum examinations.

5. The crucial test for tubercle bacilli in the blood, as well as differentiating between the true and pseudo forms, consists of inoculation experiments.

6. The method as suggested by Rosenberger as a means of early diagnosis in tuberculosis is practically valueless.

TUBERCULIN THERAPY IN PULMONARY TUBERCULOSIS.*

CLARENCE W. LEIGH, M.D.
Professor of Phthisiotherapy, Illinois Postgraduate Medical School
CHICAGO.

The following is intended as a brief résumé of the important principles governing the therapeutic use of tuberculin in pulmonary tuberculosis according to the method advocated and practiced by Trudeau and Denys.

It differs from that employed by Wright, inasmuch as immunity to tuberculin is sought by subjecting the patient systematically to increasing doses, while the latter (Wright) is governed entirely by the tuberculo-opsonic index in estimating the size and frequency of the dose, and makes no attempt to accustom the patient either to increasing quantities or to the production of tuberculin immunity. He seeks to maintain as high a degree of phagocytosis as possible, without producing subjective symptoms, and the dose may be the same, less, or more, depending upon the index findings. However valuable the tuberculo-opsonic index may be as a guide to dosage in surgical cases, it is unreliable in pulmonary tuberculosis, if for no other reason than that we are unable to control autoinoculation.

* Read in a Symposium on Tuberculosis, at the Meeting of the North Shore Branch of the Chicago Medical Society, Nov. 2, 1909.

Tuberculin is an active, artificial immunizing agent, relative in degree only, and is distinguished from the passive form in that it is not an antitoxin, and when administered causes a specific reaction of the body cells, stimulating them to elaborate their own protective substances represented by antibodies, etc. However, it is not the purpose of this paper to discuss the mechanism of immunity as applied to tuberculosis. Suffice it to say that tuberculin immunity is not necessarily an immunity to the disease.

At the outset it must be remembered and emphasized that the treatment of all forms of tuberculosis, especially pulmonary, by tuberculin, must invariably be attended with extreme caution and a high regard for certain definite rules governing its administration, and that failure to observe them may result in disaster. Severe reactions, either constitutional or local, lessen not only the patient's prospects for recovery, but may easily convert a chronic into an acute type of the disease or possibly endanger the life of the patient.

In order to avoid these evils and secure the best results, the following cardinal points must be observed:

1. The initial dose must be infinitesimal (O. T. 1-1000 mg., B. F. 1-1000 mg., T. R. 1-10000 mg., B. E. 1-10000 mg.). 2. Increase in the size of the dose must be gradual. 3. Doses must be properly spaced. 4. Never inject again until all the constitutional and local signs and symptoms have been absent for two or three days at least. 5. Never increase a dose after a reaction. 6. All constitutional disturbances *without elevation of temperature* must be regarded as exceedingly important and an indication to discontinue treatment for a time.

The first dose should be small enough to preclude any possibility of a reaction. Too large an initial dose, or, for that matter, too large a dose at any time during the course of treatment, may result in intolerance. If marked reactions occur early, it is very difficult to habituate the patient to increasing doses. Later in the treatment a certain degree of immunity is obtained and reactions are not likely to be as strong or continue so long.

Symptoms of intolerance are manifested by:

1. General fever reaction, either short or prolonged:

The short is the same as that produced by a subcutaneous diagnostic dose and is characterized by the usual fall and subsequent rise of temperature, all occurring and ending in forty-eight hours.

In the prolonged reaction there is less constitutional disturbance; the onset is more gradual; the temperature is not so high, possibly not exceeding one degree, but continues above the usual range, except in the morning, for several days or possibly a week.

2. Local reaction at site of lesion, shown by an aggravation of physical signs, cough, expectoration, hoarseness, pain and aphonia if the lesion involves the larynx.

3. Local reaction at site of injection, indicated by pain, redness, swelling, and sometimes pain and swelling of neighboring lymphatic glands. Local soreness and hardness is not always indicative of reaction, but may be due to trauma caused by injecting.

4. Constitutional disturbances with *no elevation of temperature,* such as headache, anorexia, nausea, exhaustion, sleeplessness, wandering pains, loss of weight, gastric and intestinal disturbances. These symptoms are of great importance and are frequently disregarded.

The presence of one or more of these, or other unusual symptoms or signs, either alone or collectively, in one or all of the groups, should be regarded not only as sufficient, but imperative reason, for omitting two or three or more injections, or waiting until all unfavorable symptoms have been absent for two or three days. Treatment may then be resumed with greatly reduced doses. When a marked febrile reaction occurs, omit injections for a time, and when beginning again the dose must be reduced at least one-half. In fact the slightest departure from the usual condition of the patient is sufficient reason for reducing the dose or omitting one or more treatments or both.

Tuberculin intolerance and tuberculin hypersusceptibility are not synonymous terms. Hypersusceptibility really means increasing susceptibility to decreasing doses. For example, a febrile reaction may occur as a result of a given dose, and, after waiting two or three days, or until all symptoms have disappeared, one-half the dose that produced the reaction is administered, and is likewise followed by a strong fever reaction. Again, after waiting until all symptoms have been absent for two or three days, another injection, one-half the strength of the last, is given and is also followed by a strong reaction, possibly stronger than that produced by either of the two higher doses, and so on with each succeeding decreasing dose if further treatment is attempted. In these cases abandon treatment for two or three weeks and then resume with a dose very much smaller than the one that produced the last reaction. Brown states: "The greatest care in increase should be exercised in giving tenths of a milligram of O. T. or hundredths or tenths of a milligram of B. E. or B.F., as reaction most frequently occurs during these doses. Once past this point without reactions, they are much less likely to occur."

The length of time over which tuberculin treatment is continued is an important factor. Little or no benefit can be expected from a short course. The best results are obtained by extending it over a period of nine months or a year. When the patient is exceedingly tolerant, six months should be regarded as the shortest possible time in which to reach maximum doses. It is necessary to individualize in this, as well as in any other treatment, and the maximum dose for one person may not be the maximum dose for another. The more tolerance a patient exhibits, the better the prognosis. If the patient progresses favorably, the injections ought not to be given oftener than twice a week, and when doses of 10 mg. are approached every five days is often enough. When higher doses are reached, six days, and from one to two weeks for terminal doses. In patients who manifest a considerable degree of sensitiveness to tuberculin, 10 mg. should be the maximum dose and not be repeated oftener than every 12 to 14 days.

Final doses vary greatly in different individuals, depending altogether on tolerance. Those who are sensitive to tuberculin and who reach comparatively small doses sometimes improve equally as well as those who

tolerate larger ones. It is believed now by Trudeau that large final doses are unnecessary, and by others that immunity can best be established and in less time by several courses with smaller doses than are usually suggested. However, tolerance in any event should be the guide to dosage at all times. The choice of tuberculin is not so much a matter of importance as the method of administration; i. e., strict attention to dosage, proper spacing, etc.

O. T. is a tubercle toxin, and Koch claims it produces immunity to toxin only, and not to germ, and for that reason he later produced T. R. and B. E. B. E., he states, imparts greater agglutinating power to the blood. Theoretically, it would seem either of these should be preferred to O. T., especially in febrile cases. It is claimed they are less toxic and therefore not so liable to cause reactions, and that a more solid and lasting immunity is established. The interval between doses, however, should be longer when using T. R. and B. E. B. E. in large doses sometimes causes sterile abscesses, and both T. R. and B. E. cause more local reaction at the site of injection and occasionally unexpected general reactions.

At the last International Tuberculosis Congress at Washington, D. C., briefly stated, Detre claimed that O. T. does not contain a tubercle toxin present in B. F.; that patients are extremely sensitive to B. F., varying according to the stage of the disease, and that one can determine whether the infection is bovine or human. According to a modified von Pirquet method, he applies to the skin at the same time concentrated O. T., B. F. of a culture of human tubercle bacilli, and B. F. of a bovine culture.

He divides his cases into sensitive and non-sensitive. If sensitive, whether to human or bovine filtrate. Sensitive cases are oftener found in the early stages of the disease, but are also frequently seen in older cases, especially surgical. He designates the reaction "dominant," over whichever scarification the most sensitiveness is shown; "concomitant" the one which shows no reaction. It is said the reaction also determines whether the infection is of human or bovine origin. One of the greatest advantages he attaches to the reaction is that it indicates the tuberculin which should be selected for purpose of treatment. He states that it is very difficult to immunize with the "dominant" filtrate and that the "concomitant" should always be selected for this purpose.

Gabrilowitsch, at the same session, called attention to his tuberculinum purum or "endotin," which he assures us possesses in a full measure the active principles of Koch's O. T. minus the toxic properties which cause general reaction and can be used in large and increasing doses. In cases with circumscribed pulmonary lesions from 16 to 20 injections were found necessary, and those in which larger areas of lung were involved from 50 to 60 injections. Other advantages claimed for it are that it can be used in acute or subacute cases; is not contraindicated in the presence of complications in other organs than the lungs; lowers temperature, and febrile reactions are extremely rare; the pulse is almost never accelerated, and respiration is not affected. It does not cause pain in joints, nausea or vomiting, sleeplessness, malaise, etc. Two-thirds of all cases treated with "endotin" belonged to the severe types of cases, and only 12 per cent.

could be classed as mild cases. The tubercle bacilli disappeared from the expectoration in 59 per cent. of the cases treated; diminished considerably in number in 31. Catarrhal symptoms disappeared in 75 and were lessened in 25. The temperature became normal during treatment in 31 and at the end of the treatment in 62 per cent. The number of injections was 20 in 80 per cent. of the cases. The duration of treatment was from 40 to 60 days. The initial dose was almost uniformly 0.01 mg., while the terminal dose was from 100 to 120 mg.

The writer's experience with this tuberculin does not entirely confirm the claims made for it, besides they are not in accord with present conceptions of tuberculin therapy, inasmuch as the period of time over which the treatment is continued is not sufficiently long.

Originally Koch advised that tuberculin should be used only in cases where the temperature was normal or at least did not exceed 99 degrees. Denys and others now use it in acute cases and claim excellent results in some instances. However, it is best adapted to the treatment of all chronic forms of the disease where the general condition is good and where there are no contraindications or complications. If 100 degrees is the habitual minimum temperature, and there are profound nutritional disturbances, little benefit can be expected. If, however, all other symptoms are favorable, the degree of temperature is probably not so important a factor in contraindicating its use.

It is best to give the injections, if possible, late in the afternoon, as at that time one can observe the maximum degree and accompanying symptoms. Due allowance must be made for premenstrual and post-prandial temperature and that due to exercise, etc. Improvement from tuberculin treatment is noted by a gradual slowing of the pulse and lowering of temperature. The morning remissions are not so pronounced. Slight variations, however, may occur following injections; i. e., a day or two after, and are incident to the negative and positive phases. Eventually the temperature becomes normal. The appetite increases; there is better digestion and assimilation, permitting forced feeding, if it is thought advisable, and improvement in all pulmonary symptoms. The patient gains in weight or at least ceases to lose. If, on the contrary, there is a gradual rise in temperature and increase in pulse rate, accompanied by aggravated pulmonary symptoms, exhaustion, loss of weight, etc., treatment should be abandoned for a time, if not permanently.

In this connection it might be well to remark that Wright observes "the normal weight curve for patients with tuberculosis rises, as a rule, from August to December, fluctuates from December to March and then falls to August." This should be considered in estimating gains or losses in weight when administering tuberculin. It is said, although the rule is not absolute in all instances, that tuberculin is not indicated in patients suffering from true nephritis, recent hemorrhages, those recovering from acute diseases, meningitis, diabetes, cirrhosis of the liver and cardiac complications. Brown states that only three of his patients out of over 200 treated with tuberculin developed nephritis, but does not indicate which

preparation he used. He quotes L. Spengler as believing T. R. is to be preferred and has observed no renal complications from its use, but that after O. T. 8 per cent. of his patients had albuminuria.

Strict attention must be exercised in the management of patients in all other respects. For those who exhibit much afternoon and evening temperature great benefit will result from absolute rest and avoidance of all forms of excitement. It is necessary to regulate the diet according to individual requirements. Forced feeding in this class of cases is not advisable, and, if persisted in, will result in gastric and intestinal disturbances, accompanied by headache, malaise, aggravation of temperature conditions and other symptoms. On the contrary, when the temperature shows a tendency to a lower range, and eventually approaches approximately the normal standard, forced feeding may be advisable. Under these circumstances the bowels must be made to act rather freely, and it is often necessary to administer daily a mild laxative. Out-of-door life, cheerful environment, hygienic and sanitary conditions should be maintained, if possible, and are very important factors contributing to the welfare and recovery of these unfortunates.

Finally, it can be safely asserted that it is the consensus of opinion of the most intelligent and scientific observers that, while tuberculin is a potent agent for evil, if improperly used, and that neither the remedy nor the method is ideal and results are oftentimes disappointing, yet, if properly administered in selected cases, there can be no doubt of its positive value.

ON THE SPECIFIC TREATMENT OF PULMONARY TUBERCULOSIS.*

KARL VON RUCK, M.D., AND SILVIO VON RUCK, M.D.
ASHEVILLE, N. C.

The authors show that specific medication offers a far better possibility of treating pulmonary tuberculosis successfully in suitable cases, and of assuring permanent results than by the hygenic and dietetic methods alone.

Prior to 1901, when Koch showed an increase in the agglutinating power of the serum of patients treated with emulsion of tubercle bacilli, the proof of the value of specific treatment was only clinical. The authors confirmed the findings of Koch the following year. The further development of studies of immunity in tuberculosis has led to the demonstration of other specific immune bodies; that of specific amboceptor by the adaptation of Wassermann's method by Bordet and Gengou, that of the opsonic index by the method of Wright, and these methods have afforded valuable means of further confirming clinical results.

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* Read at the Meeting of the Chicago Medical Society, Nov. 3, 1909.

The authors have verified all these methods in their laboratory, but the clinical results which have been shown to be better and more permanent than was possible in cases treated exclusively by general methods, have, in the great majority of instances, been obtained without using any of the laboratory methods as a guide for treatment, with the exception of the agglutinin test which has been made as a routine measure for several years.

It is apparent from the authors' studies, as well as from those of various observers, that specific agglutinins are absent, or are present in only small amounts in the beginning of the disease; they are always present and usually in greater amount when the disease has become more evident, but still not far enough advanced to have seriously impaired the general nutrition. That the unaided development of antibodies rarely reaches a degree sufficient for an actual and lasting recovery is attested by the more or less rapid progress of the disease and by the frequency of relapses after improvement or apparent cure.

In 567 cases treated in the Winyah Sanitarium with watery extract of tubercle bacilli, the agglutinating power, on admission, was negative in 30 cases, and varied from 1:5 in 89 cases to 1:50 in 12 cases, the average of all being 1:15. On discharge the agglutinating power had been diminished or lost entirely in 23 cases, all of which grew worse or died. Disregarding the clinical results secured short of apparent cure, of 133 cases showing agglutinations up to 1:100, 11.27 per cent. were apparently cured. Of 193 cases showing agglutinating power over 1:100 and not exceeding 1:200, 41.45 per cent. were discharged apparently cured. Of 173 cases showing agglutination in dilutions of over 1:200 and not exceeding 1:300, 84.9 per cent. were apparently cured. Of 45 cases showing agglutination in dilutions of over 1:300, 93.33 per cent. were discharged apparently cured.

In contrast to these, for example, are compared the results reported by Ravenel and Landis in 18 early-stage cases in the White Haven Sanitarium, in which specific medication had not been employed; after treatment for 4 months to 1 year none of these patients showed agglutinating power in dilutions exceeding 1:30.

The authors have further shown that growth of virulent tubercle bacilli upon the sera of patients showing varying agglutinating values is retarded in proportion to the degree of agglutinating power present, and that guinea-pigs inoculated with the respective cultures, although all developing progressive tuberculosis with fatal termination, lived the longer the greater had been the agglutinating value of the serum used as the culture medium. These results, if due to the presence of agglutinins or other antibodies, unmistakably indicate a favorable action *in vitro* as *in vivo,* which in the latter case is, of course, conditional upon the persistence of the agglutinating power in the patient's serum for a long period of time.

Whether or not this condition is actually fulfilled in the living blood may be inferred from the examination during the past year of 41 cases who had been discharged after specific treatment and who had remained

well from two to ten years subsequently. Of 15 cases discharged 2 to 3 years previously the agglutinating power was less than 1:100 in 1; over 1:100, but below 1:200, in 10, over 1:200 in 4. Of 15 cases discharged 3 to 5 years previously, agglutinating power was less than 1:100 in 4; over 1:100, but below 1:200, in 11. Of 11 cases discharged 5 to 10 years previously, the agglutinating power was less than 1:100 in 7; over 1:100, but below 1:200, in 4.

Specific amboceptor was also determined in 7 of these cases, varying in degree from 1:60 (in one case discharged 5 years ago) to 1:4 (in one case discharged 3 years before). Similar results were noted in the opsonic index.

Active immunization by means of tubercle bacilli or their proteins is thus shown to promote the formation of agglutinins and of other immune bodies in various degrees, and in the permanency of results shown in 602 cases tabulated in the report of the Winyah Sanitarium for 1907 the authors believe themselves justified in assuming a relation of the immunity induced or increased by specific treatment. The authors also report on 71 cases in which the specific amboceptor and the opsonic index were determined on admission during treatment and on discharge, in many of which daily observations were made.

They have likewise studied the sera of 30 adults free from tuberculosis and in good health otherwise, and for other purposes the sera of 20 new-born children, 13 of non-tuberculous parentage and 7 in whom one of the parents had a history of tuberculosis. The results show that specific immune bodies were never found in the sera of normal adults nor of babies whose parents were free from tuberculous taint; that specific amboceptor is, as a rule, present in tuberculous subjects and in their children at birth, and that under treatment it was increased on an average by 150 per cent., and that at the same time the opsonic index also increased, showing an average gain of 27 per cent. When the various readings are charted from daily observations, the agglutinins show an almost uninterrupted upward course, while the amboceptor and the opsonic index show rises and falls which correspond to Wright's positive and negative phases.

The curve for specific precipitins varies also, but in an inverse manner to that of amboceptor and opsonic index. The precipitins increase, on the whole, under immunization, but, in contrast to amboceptor and the opsonic index, they rise sharply after an injection.

The authors have also made observations of the blood alkalinity on admission and discharge in a large number of cases. Under immunization the rate and uniformity of increase in favorably progressing cases is remarkable, reaching points far exceeding the normal. The relation of blood alkalinity to the clinical results obtained is similar to that shown for agglutinins, amboceptor and opsonins, and it appears as though prognostic deductions can be made from its degree on admission. In the determination of blood alkalinity Dare's spectroscopic method was employed. The observations reported show that an increase in alkalinity

occurs with successful immunization and, like the increase in agglutinins, the degree of alkalinity stands in a certain relation to favorable results of treatment. While it is not claimed by the writers that this is in any sense specific, they nevertheless believe that the alkalinity of the blood is an important factor in resistance, it being a well-known fact that, especially in infectious diseases, it increases during convalescence and diminishes when the disease follows an adverse course.

From their laboratory studies coupled with their clinical experience, in which they are supported by the evidence from literature, the authors believe that they are justified in asserting that after active immunization the protective substances as well as the blood alkalinity are increased, and that *pari passu* with this increase there occurs a corresponding improvement in the condition of the patient and in the tuberculous process.

Concerning the choice of preparations for immunization the aim should be to induce active bacterial rather than antitoxic or passive immunity, it being essential that the organism elaborate its own protective substances and maintain this function for the longest period of time possible. For this purpose the bacillus itself or its soluble products are necessary. Such preparations are represented by Koch's bacillen emulsion and by the watery extract of tubercle bacilli, which latter the authors have employed in the treatment of their cases.

The question of the selection of cases suitable for immunization has been considered fully in the report of the Winyah Sanitarium for 1909. In this the state of nutrition is all important, and in cases in which this is seriously impaired or is progressively declining there is little or no response in the formation of immune substances. Thus should be excluded exhausted and cachectic patients and those whose general condition is on a decline on account of higher degrees of fever and of complications. For the results obtained reference is made to the clinical reports of Winyah Sanitarium. In that for 1909 a tabulation of 1,503 cases treated with watery extract of tubercle bacilli shows that on discharge apparently recovered were 55.5 per cent., improved 33.8 per cent., stationary or progressive 10.7 per cent.

In the report for 1907 were likewise published the experiences with the same preparation of over 100 independent observers, most of them in general practice, and without the advantage of climatic influence or of special training in the treatment of tuberculosis. The summary of their results gives the following percentages: apparently recovered, 50.3 per cent.; improved, 29.4 per cent.; stationary or progressive, 20.3 per cent.

It is of interest that most of the clinical results reported by the writers and those of others have been obtained without laboratory control, the success accomplished being entirely due to conservative methods of dosage and frequency of administration and in proper attention to individual requirements otherwise.

INCIPIENT TUBERCULOSIS: DIAGNOSIS AND TREATMENT.*

C. W. Chapin, M.D.
WELDON, ILL.

The object of this paper is to call attention not to any new thoughts or original ideas, but to the importance of an early positive diagnosis of tuberculosis, and to the simplicity, effectiveness and success of the treatment of this plague of humanity. In the early part of the first stage of this disease there probably is no disease so amenable to proper persistent treatment, and but few more insidious in their onslaught, more difficult to recognize, more discriminating in choosing for its victims those least able to resist its onslaught, both physically and financially. A large majority of tubercular patients are found in the slums of the cities and in the tenements of the country. They are the poorly fed, insufficiently sheltered and ignorant, wherever found. These, the charges of the state in reality, are least cared for, are permitted to go about untreated, untaught, until driven from work they are thrown upon public or private charity. But in the meantime, what has happened? These patients—and their number is great—have been going among the healthy, expectorating daily millions of bacilli, without let or hindrance. So as physicians and guardians of the public health, it behooves us to recognize this disease in the beginning, and teach our patient to properly care for himself, his relatives and the community.

But how are we to recognize the beginning of tuberculosis? Many cases do not present themselves until late in the disease, but, unfortunately, many of these cases we treat for dyspepsia or some other obscure name for a disease, until the period of best prognosis is past. Nearly half of the cases of tuberculosis have been treated for something else. Let us consider some of the tell-tale symptoms and signs of tuberculosis.

Cough, except in children and the aged, is invariably present, though it may escape the patient's observation. At first a dry, hacking, paroxysmal, unproductive cough, later a little mucoid expectoration is raised. This continues progressing with the disease until secondary infection occurs, when the sputum assumes a purulent character. Neither the cough nor the expectoration are pathognomonic as to time or intensity or character of either, except the bacillus to be considered later. In nervous, irritable patients the cough is worse than in the phlegmatic. It is provoked by (1) congestion due to posture (night cough); (2) secretion as in the early morning cough; and (3) by irritations, as changes in temperature, alcoholic excesses, dust, exertion, etc. Severe paroxysms, especially in early laryngeal tuberculosis, may assume serious proportions early in the disease. The early cough is often more violent than the pathology or secretion would justify, due to toxic irritation of the vagus. The sputum varies in different patients, and in the same patient from day to day. The only characteristic of the sputum is the *Bacillus tuberculosis,* which, if

* Read at Joint Meeting of the De Witt County and Brainerd District Medical Societies, July 15, 1909.

found, is pathognomonic. This is found in 30 per cent. of the incipient cases. Repeated and persistent examinations should be made in all suspected cases, but negative findings do not contraindicate the disease.

Temperature is one of the first symptoms in importance in tuberculosis, but is rarely noticed by the patient. During the activity of the disease it is invariably present sometime during the day. Generally, from one-half to three degrees are observed, about the middle of the afternoon. It is influenced by the advancement of the disease in varied extensions and complications, and its abatement marks the arrest, either temporarily or permanently, of the disease. It is intermittent in the favorable cases, but in the rapidly advancing it may be continuous.

Digestive disorders are often the complaints for which the patient seeks relief. They are anorexia, flatulence, constipation or diarrhea, with noticeable loss of weight and strength. Emaciation is nearly always present, and a gradual loss of weight will tell us that our patient is afflicted with a serious disease. These patients always show an afternoon rise in temperature and a slight cough.

The heart is almost invariably weak and muscularly inefficient. The pulse is weak, rapid and unduly susceptible to exertion during the afebrile periods. The first sound is short and weak, and the second delayed, auscultation giving the impression of an embryocardia. This condition frequently precedes the other symptoms or demonstrable signs, and is due to the toxemia affecting the heart muscle and its innervation. This is one of the most important signs in giving a prognosis.

Hemoptysis is the first symptom noticed in 4 per cent. of the cases of tuberculosis, and is the only symptom appearing in 16 per cent. of these. It is more frequent in men than women, and is rare before puberty. During the first stage of the disease it is, as a rule, slight, and is due to erosion of the bronchial mucous membrane, although in a personally observed case there were two hemorrhages on two successive days of one quart each, this being the first symptom appearing. These copious hemoptyses are generally late manifestations, and are due to erosion of the vessel walls or of small aneurisms. Any hemorrhage accompanied by cough is extremely suggestive, and if the source of the blood is the lungs it should be considered tubercular until disproved. The blood aspirated into sound lung areas during a hemorrhage frequently causes tuberculous pneumonia. Thus exacerbation of the disease following hemorrhage is of very serious import.

Anemia is frequently present during the early stages, and I believe the more thoroughly we examine into the other symptoms of chlorosis and allied anemias, the fewer of these we will find.

Passing rapidly over the physical examination, we find a few points claim our attention in the very early cases. There is a marked absence of physical signs early in the disease, although a few will almost invariably be found. Decreased expansion on the affected side is nearly always present, and a decreased excursion of the affected apex is observed. While the apices or the clavicular areas may not show dullness, there is a shortening of the note. Auscultation is of greater importance, and early

shows the expiratory murmur prolonged and weak, rough and high pitched in character. The two sides should be carefully compared, remembering that the right normally gives us higher-pitched breath sounds than the left. Râles may or may not be present, and if heard may not be tubercular. The voice sounds may be early modified, the affected area giving a high-pitched near-sound, distinctly different from the normal lung.

The diagnosis of early tuberculosis must be made from logical deductions, considering the foregoing symptoms as they are found, and by the exclusion of other diseases. It is safe to consider all cases as tubercular that show a positive decline in health, during the second, third or fourth decades of life, and which show no positive signs of other disease. Especially if they show a slight cough, an afternoon rise in temperature, or the peculiar circulatory phenomena. It is my custom to treat such cases as tubercular until cured or local signs appear, or until other indications arise, which is infrequent. However, we have a means of great aid in obscure cases, in the tuberculin reaction, or some of its more recent modifications. It has been demonstrated in the recent International Congress on Tuberculosis that the cutaneous tests are absolutely free from danger, and accurate, especially in excluding the disease in children under 1 year old; containing only the elements of error common to the other similar tests, to be considered later; but it has a valuable prognostic point as well, the seriousness of the attack varying inversely with the reaction. "The normal reaction runs its course in four days; the rapid reaction, which is complete in twenty-four hours and indicates an unfavorable prognosis; the permanent reaction which persists for from six to twenty days and is a favorable prognostic sign; it is chiefly observed in cases of healed tuberculosis." (Wolff-Eisner.)

The ophthalmic reaction is free from danger if used with proper precautions; does not react in healed tuberculosis, as the Moro test does; is comparatively accurate, but is objectionable to the patient, and should not be used in children. It seems to be generally accepted by the same congress that the above reactions are as reliable as the subcutaneous injection, and producing no reaction on the diseased area, they should supplant that procedure.

Under treatment, we will only briefly consider the three cardinal principles in addition to the specific treatment. From the standpoint of public health, every case of tuberculosis should be reported to the health authorities, and he should be taught especially the personal hygiene of his disease. All his excretions should be sterilized, including the feces, urine and sputum, the latter by burning. The people should be taught that the state should build sanatoria; and tuberculosis, like smallpox, should be the especial charge of the state. The individual who is especially subject to this disease should be taught that as nearly perfect health should be maintained as possible. That good general health, with an optimistic spirit and the absence of dissipation, are good preventives of consumption.

When affected the patient should have (1) fresh air (plenty of it in a tent); (2) plenty of good nutritious food (not forced feeding); and (3) complete mental and physical rest. Changes in climate are important, increasing the prognostic outlook by about 10 per cent. But no patient should be sent West without means to stay from three to six months without work and with proper care and tent life. Many of our patients cannot do this, but with careful treatment 80 per cent. of these cases will recover. Tent life is the hub around which should revolve the other expedients of treatment. It holds first place in importance, and every patient showing the least evidence of tuberculosis should be placed in a tent.

The so-called specific or tuberculin treatment is in its infancy as yet, but the results are very encouraging. At the recent tuberculosis congress, Denys reported 50 cases treated with tuberculin-filtrate, with 100 per cent. recoveries, and in 21 cases treated as controls with the hygienic-dietetic methods, 5 cases died. These were all prebacillary or "closed" cases. The consensus of opinion is almost as optimistic as the above report, only Meissen offering a pessimistic report. Good results have been obtained by all the different tuberculins. On the other hand, Maragliano's serum is condemned by Landis and Flick. An aseptic technic must be observed and a dose used small enough not to produce a reaction. The initial dose of the old tuberculin is given as one ten-thousandth to one-thousandth mgm., the former being used in febrile and the latter in afebrile cases.

Weekly injections are used, gradually increasing the dose. For more specific directions on administration reference may be made to papers by Hammer or Denys in the Proceedings of the *Sixth International Congress of Tuberculosis.*

With proper general hygiene supplemented by tuberculin treatment begun in the prebacillary stage, I believe our mortality in chronic phthisis will reach a very low figure.

TUBERCULAR PERITONITIS.*

ROBERT A. NOBLE, M.D.
Surgeon to St. Joseph Hospital.
BLOOMINGTON, ILL.

From an etiological standpoint, tubercular peritonitis is often obscure, but it may be a primary infection. Most commonly, however, it is secondary to tuberculosis of the mesenteric glands or lymph nodes. Again, it may be secondary to tuberculosis of other parts of the body.

It has been generally accepted that the most frequent route of entrance into the peritoneal cavity in women was through the Fallopian tube (Henry O. Marcy,[5] Mayo[6]) and the vermiform appendix or tubercular disease in the ileocecal region.

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* Read before the Ford County Medical Society, Oct. 12, 1909.

W. Allschut[7] believes the path of infection is from the peribronchial lymph through the perforating lymphatics of the diaphragm into the peritoneal cavity, chiefly to the retroperitoneal glands which are almost always involved in tubercular peritonitis. The tubercle bacilli may also pass through the diaphragm and produce localized tuberculosis of the lower surface of the membrane as sometimes occurs in early cases.

Pathologically, the process consists of the formation of miliary tubercles on the peritoneum which give rise to opaque cheesy thickenings, often nodular and with firm adhesions to the adjacent surfaces. This pathologic condition may or may not be accompanied by an exudation into the peritoneal cavity; the ascites may be serous, seropurulent, or purulent in character and of different amounts, but the amount of fluid, when any is present, is usually considerable.

Three forms are to be considered (1) a miliary tuberculosis with ascites, acute or subacute in its course; (2) a fibrous form in which ascites may be, but usually is not, present; (3) a later stage of the above form in which there occur large tubercular deposits with caseation and softening. This form has been called the ulcerative by some pathologists, and in it the lungs are usually affected.

The peritoneum may be one of the sites of a local manifestation of a generalized miliary tuberculosis, but the term tubercular peritonitis is generally understood to apply to the chronic form of the disease which in a measure constitutes a distinct affection. Even here the disease is usually secondary to disease appearing primarily in some distant part, most commonly the lungs; or the peritoneal involvement may follow by direct extension or by dissemination through the lymph paths or by a simple process of grafting from a previously ruptured tubercular focus having access to the peritoneal sac and sowing, as it were, the elements of the disease over the entire membrane.

Since 1884, when Koenig performed the first operation for tubercular peritonitis, this subject has received considerable attention from both the internist and the surgeon, so that the literature teems with the diametrically opposed views of the practitioner and the surgeon.

Borchgrewink[1] based his conclusions on a study of 40 cases. Of 22 operative cases, 8 were light, 6 moderate, and 8 severe. Fourteen, or 63.6 per cent., recovered and 8, or 36.4 per cent., died. Of 17 patients treated without operation, 14, or 82 per cent., recovered and remained well two or three years. His views are as follows: "Laparotomy is well tolerated in strong patients without fever and in a good state of nutrition; i. e., where their condition speaks for a spontaneous disappearance of the tubercular process. Laparotomy, however, in patients with fever, where the tuberculosis has a progressive character, must diminish what slight power of resistance such a patient has remaining. This power of resistance may thus yield and death follow; or it may, by concurrence of fortunate circumstances, rebound and the patient recover in spite of the operation. That form of peritoneal tuberculosis which exists without fever or with

only slight fever runs in itself a favorable course. In such cases laparotomy is unnecessary. In progressive tuberculosis the operation is dangerous and should be abandoned."

Henri T. Fontaine[2] asserts that results from medical treatment appear to equal those from surgical treatment and strongly advises a thorough trial of medical treatment before resorting to surgical treatment.

Joseph Eichberg[3] insists rather sarcastically that laparotomy *cures because it does not,* and asserts that the mortality is higher in cases treated surgically than in those treated medically.

P. E. Elestratov[8] reports a series of 136 cases treated medically, of which 31.6 per cent. recovered from medical treatment alone, while of 240 cases, 78.3 per cent. recovered as a result of surgical intervention. Elestratov believes that the variety of tubercular peritonitis which runs an almost stationary or chronic course, with moderate temperature and not much ascites, without interference with nourishment, is capable of retrogressing to permanent recovery, provided no other organs are afflicted with tuberculosis. When the existence of tubercular foci can be established serving as the starting point for infection of the mesenteric glands, intestines or uterine appendages, surgical intervention is urgently indicated.

Parker Syms[4] says: "To-day it is as true as ever that laparotomy *per se* will effect a cure in certain cases of tubercular peritonitis; and to-day we are as ignorant of the reason why this remarkable phenomenon takes place as we were when it was first discovered and demonstrated. On the other hand, much has been learned in the last ten years of the rationale of the treatment of tubercular peritonitis.

"For instance, we have learned that operations should not be undertaken during the first years of infancy; we have learned that surgery offers but little hope in the adhesive variety of the disease; we have learned that the serous variety offers the best prognosis under the various forms of treatment and that surgical treatment of this variety offers the best results obtainable in the disease; but the most important lesson we have learned is that the scientific operation of to-day is the one which has for its foundation the removal of the original focus of the disease, as tubercular Fallopian tubes, vermiform appendix, mesenteric glands, etc. Statistics have proved that cases treated by operation have done better than a similar series of cases treated without operation. We realize the importance of hygienic treatment; we realize the impropriety of operating on all cases of tubercular peritonitis; we realize that laparotomy should not be performed when the peritoneal trouble is only one phase of a more or less general tuberculosis."

From Nov. 26, 1903, to March 30, 1909, fifteen patients have submitted to laparotomy for tubercular peritonitis or tubercular peritonitis was found at the time of the operation. In five cases (33.3 per cent.) the diagnosis was made previous to operation. Fourteen, or 93.3 per cent., of the cases were females. Thirteen (86.6 per cent.) were American born; one Swedish, one negress. In eight cases (53.3 per cent.) the

appendix was primarily involved. In four cases (26.6 per cent.) the Fallopian tubes were primarily involved. The youngest patient was 14 years of age, the oldest 34 years of age. Average age for the series was 24 years. In two cases the indications for operation were symptoms of an acute attack of appendicitis, in which gangrene of the appendix was present at the time of operation. (Nos. 1, 3.) The length of time elapsing since the operation in Cases 1 to 12, inclusive, is one year and five months to five years and seven months, or an average for the series of three years and six months, during which time the patients have remained well and free from symptoms of tubercular peritonitis. In No. 6, one year and eleven months subsequent to the operation for tubercular peritonitis, patient submitted to operation for cholecystitis, at which second operation no evidences of the former tubercular disease was discoverable.

CONCLUSIONS.

1. Tubercular peritonitis of the serous variety is best treated by laparotomy.

2. Great care should be exercised in making intra-abdominal manipulations and examinations, not to cause abrasions.

3. In the adhesive variety no attempt should be made to disturb the adhesions.

4. The less the tissues are handled the better will be the results.

5. Removal of the primary focus of the tubercular peritonitis when possible should always be performed, i. e., appendix, tubes, etc.

In performing these operations the median incision was used. In every case a variable amount of straw-colored fluid escaped, containing flocculent material in Cases 1, 5, 6 and 12. The peritoneal surface was studded with tubercles, except in Case 14. In each case, after removing the affected organ, appendix or tubes, the abdominal cavity was mopped dry, flushed with normal salt solution and the abdominal walls were closed in layers. No drainage was used except in the first case.

CASE HISTORIES IN BRIEF.

CASE 1.—Mary P., aged 26 years. Family history negative as to tuberculosis. Personal history: has never been seriously sick but during past two or three years has complained of being easily exhausted on slight exertion. Has had slight cough without expectoration. Colicky pains over abdomen with occasional periods of extreme tenderness over entire abdomen. Abdominal distention at times.

Nov. 24, 1903: Patient has been sick about one week. Illness began with nausea, vomiting, chill, elevation of temperature to 101 to 103 F. Abdominal distress, which for the past two days has been more or less localized in appendiceal region. Rectus rigidity over right side. Nov. 26: Temperature 99.6 F., pulse 150. Extreme prostration. General abdominal rigidity. Immediate operation advised. Patient removed to St. Joseph Hospital and operated upon on arrival at hospital. Peritoneum highly injected and studded with tubercles. Appendix tubercular and gangrenous from tip for about one inch but not perforated. Removal of appendix. No adhesion broken up. Cigarette drain to appendix stump. Formalin 1 to 1000 dressing. Nov. 27: Removal of cigarette drain. Dec. 15: Wound healed per primam. Patient removed to her home. June 15, 1909: Patient has been in good health since operation. No return of any tubercular indications.

Case 2.—Hilda E., aged 22 years. Female. Swedish nativity. Family history negative as to tubercular conditions. Personal history: For several months previous patient has noticed gradual abdominal enlargement so that the waist bands must be changed. Physical weakness increasing rapidly so that patient is easily exhausted. Has had no cough, but has had temperature elevation from time to time. Complains of radiating pains over abdomen and under shoulder blades. Physical examination: Patient appears sickly. Skin has yellowish muddy appearance. Temperature 102 F.; pulse 120, weak and irregular. Hemaglobin 65 per cent; mild catarrh of nose and throat; lungs and heart normal. Abdomen distended; abdominal breathing present. Slight rigidity of abdominal muscles on pressure. Percussion dulness over both flanks, which disappears on change of position. Vaginal examination, negative. Diagnosis, tubercular peritonitis with ascites.

Operation, June 10, 1904, St. Joseph Hospital. Tubercles scattered over peritoneum and intestinal coils. Appendix, uterus, adnexa, gall-bladder free from tubercular nodules. Some few adhesions freed.

Patient left hospital at end of eighteen days with instructions to live outdoors, forced feeding, general hygiene, and to report condition. Jan. 1, 1905: Has gained 20 pounds, hemoglobin 85 to 90 per cent. Works daily as housemaid. Jan., 1908: Letter states patient has not been sick since leaving the hospital. Shortly after this letter patient returned to Sweden and no further report has been obtained.

Case 3.—A. R., male, aged 14 years. Family history negative as to tubercular history. Personal history: Recurrent attacks of colicky pain over abdomen for two or three years with occasional slight elevation of temperature and occasionally localized tenderness in region of appendix.

March 4, 1905, called at 5 a. m. to see patient. Temperature 99.6 F. Extreme tenderness over appendiceal region. Removal to Brokaw Hospital. Operation March 5, 1905. Tubercular deposits on appendix and peritoneal surface. Gangrene of appendix for one-half inch from tip toward cecum. Removal of appendix. At end of fourteen days patient returned home. Postoperative course: Steady improvement in general health since operation. No return of abdominal symptoms. July 1, 1909: Present condition of health excellent.

Case 4.—Mrs. B., female, aged 32 years. Negress. Patient of Dr. E. L. Brown. Seen at St. Joseph Hospital in March, 1905. Family history negative. Personal: Abdominal pains and distention during past year. Intermittent elevation of temperature. Generalized pain on pressure over abdomen. Vaginal tumor size of bologna-sausage occupying left lower pelvis. Operation March 11, 1905, St. Joseph Hospital. Tubercular deposits on peritoneum, left Fallopian tube, and intestinal coils. Left tube enlarged but not fluctuating. Removal of tube. End of three weeks patient returned home and at end of six weeks resumed household duties contrary to advice. Pathologic: Microscopic and macroscopic, left tube showed tubercular process. Present condition good.

Case 5.—H. A., female, aged 25 years. Family history negative. Personal history: Has had "shooting" pains through abdomen for past eighteen months to two years with generalized tenderness. No localized tenderness at any time. Intermittent fever. July 8, 1905, operation. Tubercular deposits on intestinal coils, in mesentery, and appendix. Removal of appendix. Patient returned home at the end of two weeks. July 1, 1909: Patient states general health has been very good since operation. No return of abdominal pain or discomfort.

Case 6.—S. S., female, aged 28 years. Has been sickly for several years but no serious illness. Has complained of "stomach" trouble, abdominal distress, nausea, vomiting, general weakness, easy exhaustion. Occasional fever. Aug. 25, 1905: Taken sick during the night with chill, fever following, nausea, vomiting, and abdominal pain. Examination shows rigidity of right rectus with extreme tenderness on pressure in appendiceal region. Pulse 120. Temperature 102 F. Between this date and Aug. 29 condition remained practically unchanged. Aug. 30: Persistent vomiting. Pulse 140, temperature 100 F. Marked abdominal rigidity. Removed to Brokaw Hospital; operation this date. Peritoneum studded

with tubercles. Appendix tubercular. Tubes, uterus, etc., free. Removal of appendix. Uninterrupted recovery. Patient home at the end of three weeks. Continued in good health until May, 1907, when she had an attack of cholecystitis which was quite severe. These attacks continued until July 15, 1907, when an operation was performed for cholecystitis at Brokaw Hospital. After opening abdominal cavity careful examination of peritoneum was made for former tubercular foci but none were found. Gall-bladder enlarged. Ductus and bladder free from stones. Gall-bladder drainage. Patient returned home in four weeks and has remained in good health to present date, having gained some 20 pounds in weight since first operation.

Case 7.—A. P., female, aged 21 years. Family history negative. Personal history: Complained of abdominal pain and distress for two years. Occasional severe colicky attacks of pain radiating over entire abdomen. Says cannot wear corsets on account of pressure on abdomen. Tenderness general over abdomen. Has had occasional severe attacks accompanied by slight temperature elevation. Abdominal distention frequent.

Dec. 12, 1906: Operation. Peritoneum injected and occasional tubercles on peritoneum and intestinal coils. Appendix tubercular. Removal of appendix. End of two weeks patient up and about. Since then health has improved greatly. Has gained 30 pounds in weight and at present writing is in excellent health.

Case 8.—Mrs. McK., female, aged 28 years. Patient of Dr. Strauss.

June 3, 1907: Seen at Brokaw Hospital. Has been sick for two years. Abdominal distress, indigestion, nausea, vomiting. Pain on pressure over abdomen, more on right side than on left. Frequent colicky pains radiating over entire abdomen. Abdominal distention. Hemoglobin 75 per cent.

June 5, operation. Peritoneum covered with tubercles as also intestinal coils and appendix. Uterus and adnexa free. Removal of appendix. Returned to her home at the end of eighteen days. Subsequent history negative as to tubercular peritonitis.

Case 9.—Mrs. H. R., aged 22. Patient of Dr. E. L. Brown. Seen in consultation Nov. 27, 1907. Family history negative. Personal history: Married six months. Since marriage irregular menstruation. Colicky pains over abdomen. During past month flowed some every few days. Lungs normal, abdomen distended, tender to pressure over right quadrant. Vaginal examination: Tumor in right pelvis extending from uterus, which is enlarged. Tumor about size of hen's egg. Examination very painful to patient. Diagnosis, extrauterine pregnancy. Operation, St. Joseph Hospital, Nov. 29. Peritoneum studded with tubercles. Right tube enlarged size of hen's egg and covered with tubercles. Right tube removed. Pathologic report: Right tube size of hen's egg. After opening same found to contain yellowish caseous mass. No evidence of tubal conception. Patient returned home at the end of three weeks. Has been well since operation. No distress or illness since leaving hospital.

Case 10.—L. B., nurse, aged 22 years. Has complained of abdominal tenderness for two years. Daily temperature for past eighteen months 99 F. to 101.2 F. Colicky pains over entire abdomen. Lungs normal. Abdomen distended, painful on pressure over both right and left areas. Diagnosis, tubercular peritonitis. *X*-ray treatment for six months without relief from pains or distention. Operation Jan. 16, 1908, Brokaw Hospital. Tubercles on peritoneum and appendix. Uterus and adnexa free. Removal of appendix. Left hospital in three weeks and sent to Texas, where there was steady improvement. Returned in October and during winter complained of considerable distress in abdomen. Again sent to Texas, where she has remained since. Letter states condition of health is excellent at present time.

Case 11.—A. G., female, aged 24 years. Family history negative as to tuberculosis. Personal history: Has never been a robust individual but has had no serious illness. For past three years has complained of abdominal distress. Indefinite colicky pains radiating over abdomen and under shoulder blades. Frequent abdominal distention. Occasionally generalized pain on pressure over entire

abdomen. Slight cough (dry), rather persistent, without expectoration. For past six months irregular and painful menstruation, which previously had been regular and painless. Examination: Hemoglobin 70 per cent, temperature 100 F., pulse 100. Lungs and heart normal. Abdomen, no distention present. Complains of tenderness on pressure. Slight abdominal rigidity. Vaginal examination shows tumor extending from uterus on both sides. Gonorrheal history fails. Microscopic examination of vaginal secretion and urethral secretion negative as to gonococci. Jan. 10, 1908: Operation, St. Joseph Hospital. Peritoneum studded with tubercles. Both tubes enlarged and covered with tubercles. Removal of both tubes. Patient left hospital at end of three weeks and has remained in good health since operation to present date. Pathologic examination: Both tubes filled with caseous material. Sections show tubercular areas throughout tubes.

Case 12.—R. T., female, aged 22 years. Family history negative. Personal history: Has been sickly for about one year but not confined to bed at any time. During past four months has complained of abdominal distress. Irregular and painful menstruation which previously had been regular and comparatively free from distress. Has also complained of abdominal distention and pronounced weakness on slight exertion. Physical examination: Chest negative as to heart and lungs, abdomen slightly distended and tympanitic on percussion. Palpation, slight rigidity of rectus, more on right than left. Patient complained of intense pain on slight pressure. Vaginal examination: Small sausage-shaped tumor extending from uterus to the right which involved the right Fallopian tube. March 12, 1908: Operation. Peritoneum highly injected and studded with small tubercular deposits. Appendix free from tubercular deposits. Right Fallopian tube greatly distended, moderately firm, studded with tubercular deposits. Removal of the right tube. At the end of three weeks patient returned to her home and has remained free from any tubercular symptoms since the operation.

Case 13.—R. C., female, aged 18 years. Has been sick for four months with colicky pains over the abdomen. Slight elevation of temperature from time to time. Localized tenderness and rigidity over the appendiceal region. For four weeks previous to operation patient was confined to her bed owing to extreme distress over abdomen, during which time temperature ranged from 99 to 101 degrees daily. Dec. 20, 1908: Was removed to St. Joseph Hospital and prepared for operation. Dec. 21: Operation. Found peritoneum studded with tubercular deposits. Appendix was enlarged and highly injected and studded with tubercles. Uterus and adnexa free. Removal of appendix. At the end of ten days patient returned home and has gained 35 pounds since operation. (August, 1909.)

Case 14.—C. R., female, aged 24 years. Family history negative. For six or eight months previous to operation patient has complained of abdominal distress and pain under the shoulder blades. Colicky pains throughout the abdomen with more or less localized tenderness in region of the appendix. Elevation of temperature was not noticeable at any time. March 29, 1909: Taken with acute distress in the abdomen, vomiting, temperature 101 F. Rectus rigidity on right side. March 30: Continuation of symptoms of day before with increased pain in the appendiceal region. Very marked rigidity of right rectus. Patient removed to St. Joseph Hospital for immediate operation. Operation 9 p. m. Parietal peritoneum showed no tubercles. The appendix swollen, retroperitoneal. After opening the posterior peritoneum the appendix was found to be covered with tubercular nodules. Removal of the appendix. Microscopic examination of the appendix showed it to be tubercular. At the end of ten days patient returned to her home and has remained in good health ever since.

Case 15.—Mrs. C., aged 34 years. Patient of Dr. C. E. Chapin. Family history: Two sisters died with pulmonary tuberculosis. Personal history: Six months previous, patient had been confined. Three months after delivery menstruation resumed. During past month irregular flowing every few days. Complained of nausea and abdominal distention. Second day patient was in the hospital nurse reported passage of small amount of membranous matter per vagina. Examination: Abdomen tender to pressure from costal margin to pelvic floor. Lower abdomen distended more to right side than left. Vaginal examina-

tion: Large mass to right of uterus and posterior so that uterus was displaced to the left. Uterus slightly enlarged. Diagnosis, extrauterine pregnancy. Confirmed by C. E. Chapin and C. T. Orner. Operation, St. Joseph Hospital, April 7, 1909. Peritoneum, mesentery, and intestines studded with tubercular mass. Omentum and intestines matted together in pelvis so as to form large tumor mass which was mistaken for the extrauterine pregnancy. Abdominal cavity was mopped dry, flushed with saline solution and closed in layers. Patient left the hospital in sixteen days and has continued in good condition since operation. (August, 1909.)

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PELLAGRA.*

C. H. Lavinder, M.D.

Passed Assistant Surgeon, Public Health and Marine-Hospital Service.

WASHINGTON, D. C.

I am very much obliged to the President, Dr. Robison, for his kind words in calling me an authority on this subject, but I doubt seriously whether there is any one in this country entitled to be so called. However, I have had some experience with pellagra, and am only too glad to tell you what I know. In telling you what I know about this disease, perhaps it would be better for me to speak in a general way, rather than take up any particular points.

I take it, most of my audience have not paid a great deal of attention to this subject, and it is better to give a logical account of it than to take up any one particular phase. There are some here, however, who are quite familiar with certain phases of the subject. So if I should say things which are already known, I shall be sorry, but at least we shall try to gain a corrected idea of the entire matter.

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* Stenographic report of an address, with lantern slides, delivered before the Chicago Medical Society, Nov. 24, 1909.

The subject of pellagra is a new one to American medicine, and is attracting a great deal of attention, doubtless to some extent on account of its novelty. A couple of years ago, if you had said to almost any medical man, "I have a case of pellagra," very likely he would have asked you what that meant, because even the word was unfamiliar to a great part of the medical profession. Quite recently there was held a National Conference on Pellagra, at Columbia, S. C., which was attended by some 350 physicians and scientists, representing several states in the Union, so that you can see the immense interest that is now being taken in this subject. The word "pellagra" was introduced into medicine by an Italian by the name of Frapolli about 1760, who found the word in use among the common people of Italy. The word refers to the skin lesions of the disease, and means ulcerous or rough skin, a matter of some importance with regard to certain expressions in use. There are a great many synonyms, very few of which are in use, the word "pellagra" being common to all languages with which I am familiar.

As to the origin of pellagra, it is generally accepted that the disease was first recognized in 1735, and was first described by a Spanish physician by the name of Casal, a somewhat remarkable man in many ways, who wrote a good description of its symptomatology. Following its appearance in Spain, the disease appeared in France, later in Italy and Roumania and in other parts of the world. The story of the appearance of pellagra in the United States is interesting, but somewhat pathetic, and has never been fully told. I have not time to go into it, but I have been associated with some men who first recognized the disease, and the story is a very striking one, indeed.

The first recorded instance of any case of the disease occurred in 1864, at a meeting in Washington of asylum superintendents. It was mentioned there, but very little more than that, and several sporadic cases were reported up to 1907. In that year Alabama, South Carolina, North Carolina and Georgia all developed a number of cases, and the disease was recognized as being prevalent in this country.

When we come to take up the etiology of pellagra, we find a rather chaotic state of affairs in some respects, and yet there are two distinct points which we should remember, one of which is that the disease is always associated with poverty, and the other is, it is associated with the use of Indian corn as an article of diet. These two points or factors have been recognized with regard to pellagra ever since its discovery. Casal himself seems to have had an idea that the disease might be related to Indian corn. Now, the broad basis upon which the relation between Indian corn and pellagra rests is comprised in a few facts. In the first place, it is historical, and much of it is doubtful. It is said that pellagra followed the introduction and cultivation of Indian corn in Europe, which is supposed to have taken place in the year 1700. That is somewhat doubtful. It is said further that the disease develops where Indian corn cultivation spreads. That is also somewhat doubtful. It certainly seems to be a fact that the disease is not known endemically, except in those countries that grow and eat Indian corn, and eat it to

the exclusion of other varieties of food. There are many instances on record where in pellagrous sections the people of one village would be found entirely free from this disease, and this village would be found to subsist on food other than Indian corn. Facts of this character would lead us to put this disease and this food in a certain relation to each other. The subject has developed along certain lines, so that at the present day there have been put forth a great many theories as to the cause of the disease. Soon after Casal's time the idea was prevalent that the disease was due to Indian corn. It was probably first definitely enunciated by Marzari, in 1810, who thought that Indian corn lacked certain nutritive principles. This idea was later shown to be false, and another Italian by the name of Ballardini a little later advanced the new idea of spoiled corn. He had noticed that there grew on certain specimens of corn, molds, afterward shown to be sporosorium maidis, and offered the first suggestion that pellagra was due to damaged corn, and not to good corn. Following him, Lombroso, who did more work on pellagra than any other man of his time, developed this idea of Ballardini broadly, and put forward a theory which has found a great many adherents in one form or another.

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The various theories at the present day with regard to the etiology of pellagra may be divided into two general classes. On the one side, the Zeists, or those who believe in Indian corn. On the other side we have the anti-Zeists, or those who deny such a causal relation. In the latter class we have only one school, and that is the French school. Their idea is that pellagra is not a morbid entity, but a symptom-complex found in depressed states, particularly among the insane. Any one who sees pellagra in insane asylums, and who sees it outside of such institutions, finds that the idea does not appeal to him near so much. The Zeists have put forth several ideas. First, the intoxication or toxico-chemical idea of Lombroso. This idea has been taken up and followed by a great many members of the profession, and a great many have entered this field in attempting to establish what parasites grow on corn and the chemical nature of the toxin involved. Lombroso did not determine the parasite involved, but claimed that chemically the principal toxic substance was alkaloidal in its nature, and that it was not any one substance, but probably two or three. The subject was left in doubt. In working with corn he did a great deal of experimental work on animals, and produced from spoiled corn a substance he called pellagrozine, which he thought to be the most poisonous substance found in corn. He left the matter in doubt, but remained a very ardent supporter of the toxicochemical theory of the cause of pellagra.

The next group of thinkers directed their attention to the idea of autointoxication or the toxico-infective theory. The idea seems to be that the normal flora of the intestine, the colon bacillus especially, when feeding on corn, develops the peculiarity of producing a specific toxic substance, and certain experimenters claim to have produced with the colon bacillus on corn media toxic substances of a specific nature; or else

that there is ingested with the maize some bacterium which produces the toxin within the intestinal tract.

We come to the third and last class, who regard the disease as an infection, pure and simple, either by bacteria or by molds, or by protozoa. Of those who regard the disease as an infection by bacteria, there is practically but one man to-day whose views are worthy of serious attention, and that is Dr. Tizzoni, of Italy. The idea of a specific bacterium in maize as the cause of pellagra dates back a great many years. Tizzoni's work is recent and must stand the test of time. He states that he has been able to isolate a strepto-bacillus from the blood and stools of pellagrins in the acute and chronic forms of the disease, and also from spoiled corn. This bacillus is specific, and will reproduce the disease in animals, particularly the guinea-pig, and it can be isolated from the guinea-pig's dead body. In his feeding experiments he fed laboratory animals with his bacillus without producing any disease at all, unless he added a share of corn to the diet, and if he did so the animals developed the clinical symptoms of pellagra and died. He further states that the animals died after a certain length of time, as long as ninety days, and that the toxin seemed to have a special selective affinity for the nervous system. I have been unable to secure any culture of Dr. Tizzoni's bacillus, although I have written to him two or three times, and I have been unable to isolate this bacillus myself.

The next idea is that the disease is due to infection by molds. This idea was put forward by Dr. Ceni, of Italy, in 1902, and is perhaps the most ingenious of all theories so far put on paper. This theory still stands unconfirmed. Ceni thinks pellagrous symptoms are due to the ingestion of molds, *aspergilli* and *penicilli,* but pays particular attention to the *aspergillus fumigatus* and *aspergillus flavescens.* These molds are later infective. They enter into and locate in various parts of the body, particularly in the pericardium, and in time produce local diffuse inflammatory lesions, and an absorbable toxin, producing finally the intoxication which we call the disease. Of the various varieties he thinks that the *penicillium glaucum,* when taken into the intestinal tract, acts purely there and nowhere else, and never invades other parts of the body. He also brings forward the rather remarkable idea that these molds produce toxins naturally during two seasons of the year, spring and fall, when pellagra is most evident in man, the toxins being produced at the culminating phase of the development of the molds, according to his phraseology. He also says that mold spores withstand being boiled for fifteen or twenty minutes, and this would have some bearing on the cooking of food. He further states that he has isolated these molds at autopsy in pure cultures, and has been able to reproduce the disease by feeding spoiled corn to chickens and finding the same lesions as are found in man, so that his work looks plausible, but it has not yet been confirmed.

Then we have the idea of protozoa, suggested by Sambon in 1905, at a meeting of the British Medical Association. This idea is attractive in these days of protozoa and spirochetes. He produces evidence discrediting the history of the introduction of corn culture into Europe and its

relation to pellagra, and then attempts to show that because there is a relatively large mononuclear increase in the blood, a perivascular round-cell infiltration in the brain, as in sleeping sickness, and because the disease is modified by the use of arsenic, that probably pellagra is protozoal in nature.

There has been some work done also with reference to the Wassermann reaction in America and abroad, showing that we get a positive Wassermann reaction by using lecithin as antigen; but nobody has found protozoa in the organs or elsewhere, and that leaves it to be an interesting suggestion, but nothing more. These are all the ideas that have been put forth in connection with the etiology of the disease, except the predisposing causes, which are of some importance.

The disease is largely related to poverty. It does not seem to occur among the best class of people, although we do find it in America among people who are fairly well to do. In Italy, however, it is the poorest of the population that suffer from pellagra, and usually it is the poorest class of the rural population.

Sex seems to have some connection with the disease, for the reason that 75 per cent. of the cases found in this country have been in colored females, the explanation of which is lacking. Alcoholism plays some part in the disease. Alcoholic drinks made from spoiled corn are said to be just as bad as eating spoiled corn. Climate and seasons seem to have no relation to the disease, except by spoiling the corn.

Heredity is a matter of some importance in connection with this disease. It is hereditary in the sense that a person may have a predisposition for the disease, and there are some men who think the disease is actually hereditary. The offsprings of pellagrins, who are poorly developed physically, readily develop the disease.

CONTAGION.

We may speak a word here about contagion. The question of the contagiousness of pellagra has been fought out many years ago, and decided in the negative. This is a matter of some importance, since in this country a few regard the disease as contagious, and some quarantine measures have been enforced. This cannot be settled definitely, but, at the same time, for the present, we certainly have no right, it would seem, in the present state of our knowledge, to consider this disease contagious nor to use quarantine restrictions.

RELATION TO CORN.

When one looks over the various theories in regard to pellagra and its relation to corn, and thinks about the subject, he is not satisfied with any of the theories that have been put forth. The evidence in my opinion for corn is unsatisfactory in a great many respects, and it does not appeal to many minds; at the same time, I do not see how, with the evidence before us, which is large, we can get away from corn, in the present state of our knowledge, and I see nothing for us at present but to regard corn as bearing some etiological relation to pellagra, unless we can prove otherwise.

PATHOLOGY.

With regard to the morbid anatomy of pellagra, the post-mortem findings are not very characteristic. Roussel complained that when he came to do sections on cadavers he found but little morbid change to explain the clinical state, and what he did find was largely of a secondary nature. Changes common to many chronic diseases are frequent. Atrophy of the various organs is not unusual, nephritis, nearly always small spleen, enlargement of the mesenteric glands, intestinal congestion and possible ulcers, sometimes brown atrophy of the heart, and pigmentary and fatty degenerations in the liver and kidneys. The central nervous system seems to display the most characteristic changes.

There are discrepancies in the statements as to the usual lesions, but there is a fairly general agreement that there are degenerative changes in the posterior and postero-lateral tracts, especially in the dorsal and cervical regions. Lombroso seems to have attached importance to certain lesions of the sympathetic ganglia. It is of interest in this connection to state that at the recent conference on pellagra there were papers presented which showed a great prevalence of amebæ in pellagrins and some possible etiological importance was attributed to these parasites, but no definite expression of opinion was made. Protozoa are not uncommon in the stools of pellagrins, especially in insane asylums. In the South I have seen hookworms and roundworms, and flagellates frequently; but amebæ have not been common in my experience.

CLINICAL SYMPTOMS.

When we come to the consideration of the clinical picture of the disease, we again meet with much confusion. The disease is so protean in its manifestations and one sees so many types and so many changes that sometimes one wonders whether one is dealing with the same disease or not. In addition to that, there are regional differences. Patients in some sections manifest symptoms which are not seen in others. The cause of this is not known. Many attempts have been made to divide pellagra clinically into stages or periods. The ordinary division is into prodromal, first, second and third stages, this being an artificial division purely. Strambio, one of the early writers and first clinical students of the disease, divided it into intermittent, remittent and continuous, but that is not satisfactory. Roussel, a great French clinician, attempted to be a little more logical, and divided pellagra into pellagra of the first degree, or spasmodic pellagra, because he found that the spasmodic phenomena occurred early. After that, commencing pellagra, which was either prodromal or confirmed pellagra. Then pellagra of the second degree, or paralytic pellagra, the paralytic manifestations succeeding the spasmodic ones. And, finally, the third stage, cachexia, which he divided into two types: cachexia without skin manifestations (sine pellagra) and cachexia with pellagra. These divisions are not so simple as prodromal pellagra of the first, second and third stages. The disease does not develop in such a logical way as one would imagine from this scheme. Perhaps the division into prodromal first, second and third stages, being the simplest, is

the best. The prodromal stage of pellagra is seldom noticed; it is often passed over by the patient because the symptoms are not severe, and because it occurs among a class of people who do not complain. It is usually vague, but may be marked, and may last many months. It is characterized by lassitude, headache, some pain in the stomach, digestive disturbances, perhaps a little vertigo and muscular weakness, and these symptoms may continue for some time. They may continue for an indefinite time, say a month or two or a year or two, until finally in the springtime or fall there appears the exanthem which characterizes the disease, and then we pass into what is called the first stage. Now, pellagra is an endemic, epidemic disease which recurs either in the spring or fall nearly always, but not necessarily so by any means. It may continue throughout the winter. There are three systems of the body which the disease usually involves, namely, gastrointestinal, nervous and cutaneous, forming the pellagrous triad. There is usually a predominance of the gastrointestinal symptoms in the first stage. If you see a patient for the first time after the disease is well developed, you will find the exanthem on the hands most likely, possibly on the backs of the feet, or back of the neck, and along with it stomatitis and perhaps some diarrhea. The knee-jerks are exaggerated. Perhaps there are some vague pains, vertigo and muscular weakness, very marked especially in the lower extremities, and that is the type of disease you see when the affection first appears. The nervous symptoms are not so marked. When the patient passes into the second stage we come to the marked cerebrospinal disturbances. In the first stage stomatitis is quite frequent. It occurs in the springtime. The tongue of the patient is usually bright red in color and frequently coated heavily. We have noticed in several sections of the country the strawberry tongue, the papillæ being prominent, but sometimes colored black (stippled tongue). The knee-jerks are nearly always very active. Diarrhea is quite profuse, and is found, as Lombroso states, sometimes of a spasmodic type, with or without the presence of blood and mucus, being dysenteric without the presence of amebæ. This condition may last for an indefinite time. Sometimes the diarrhea will cease without treatment, and the patient remains apparently well until the next spring, when the same state of affairs will occur again. The symptoms may occur once or twice or oftener, and then the patient passes into the second stage of the disease, which is characterized by serious cerebrospinal symptoms. The motor disturbances become much more marked; there is marked muscular weakness; the gait may be slightly spastic. There may be partial paralysis; one-sided ptosis; possibly some ataxia, possibly muscular tension or tonic contraction, with tremor of the hands or retraction of the head as in meningitis, or even epileptiform convulsions. Along with these symptoms we have a number of hyperesthesias which are prominent in the disease. Patients complain bitterly of all sorts of itching and of burning sensations in the esophagus and stomach, and perhaps heaviness of the generative organs; pain in the stomach and back. These hyperesthesias sometimes become so intolerable that these patients commit suicide. Suicide is not infrequent among this class of people. They complain of

shooting pains around the body, of a neuralgic type. The patellar tendon reflexes are increased or may be diminished, or absolutely lost. The Babinski reflex occurs occasionally, and Kernig's sign may occur in this stage of the disease. There are some disturbances of the organs of special sense. We may have weakness of vision, night-blindness, photophobia; marked conjunctivitis is often noticeable. One pupil may be dilated more than the other. The ophthalmoscope reveals nothing of great consequence. There may be blepharitis. We may have vasomotor disturbances. We may have pallor of the skin and later dilatation of the capillaries; redness of the face and nose, or seborrhea on the face is not unusual. In this stage you get also psychic disorders which I will not enter into. Among the general symptoms there is lack of temperature in this disease, except in certain stages, which I will describe later; you often have slight elevation of temperature. The pulse shows nothing characteristic. The gums may be scorbutic in type or may not. In children there is retarded development. The gastric juice in pellagrins shows diminished hydrochloric acid, as reported by many observers, which is a point of some importance in the differential diagnosis. The blood of pellagrins shows nothing very characteristic, except that there is said to be a relative increase in large lymphocytes. In consequence of the digestive disturbances the patient finally passes to the last stage or the stage of cachexia. Marasmus increases; diarrhea becomes more profuse; the patient gets weaker and weaker, and may become paralytic or paretic. In this condition bed-sores may develop, as they do in almost all exhausting states, and dropsy follows, or some intercurrent disease frequently ensues, and closes the scene. Many observers say that there are two sets of symptoms, namely, the spasmodic on one side and the paralytic on the other. Pellagrous erythema is one symptom that is very characteristic, and which I will speak of in connection with the exhibition of the slides. We have also what is known as pseudo-pellagra. This word was first introduced by Roussel to describe certain cases which he did not regard as pellagra.

Landouzy and others had reported cases of pellagra among the insane who had not eaten corn, but this, in Roussel's opinion, was not true pellagra and he called such cases "pseudo-pellagra." It was unfortunate that this word was introduced into the literature, for it has caused much confusion. Of course, borderline cases have been found and are difficult of diagnosis. For instance, in insane asylums we find many types of the disease difficult of diagnosis, and there is a tendency on part of the members of the medical profession in this country perhaps to diagnose pellagra too frequently than otherwise. It is a matter which requires caution in my opinion. There is a form of well-marked acute pellagra, which is called typhoid pellagra. It is not acute from the beginning, and occurs only in the chronic cases. For instance, patients who have had the disease for three or four years, without any particular reason will have an intensification of all the symptoms, become tetanic, and die in ten days. These patients run a high temperature; they become very spasmodic; they have a low muttering delirium and may be unconscious, and are usually carried

off by some intercurrent pulmonary disturbance. It is the most acute type that is known.

There seems to be some confusion among psychiatrists in their classification of the psychosis of pellagra. This is probably due to the fact that most authors use the old terminology. In the literature reference is frequent to melancholia, for example, but the modern idea of melancholia is quite a different thing from what is usually described by writers on pellagra. The general character of the psychosis among these patients is one of depression and retardation, and the psychosis could probably be called toxic. There are two states so frequent that they have become classic: sitophobia and hydromania. The former of these consists in a refusal of food with perhaps mutism. In the latter there is usually a so-called passion for water or occasionally a repugnance for it. Suicide by drowning is not uncommon among pellagrins.

There is seen occasionally a neurasthenic type of pellagra. I have seen cases that were diagnosed and treated for neurasthenia for a year before the characteristic exanthem appeared and showed what the disease was.

As to the duration of the disease, it may last only a few months, or it may continue off and on for twenty-five or thirty years. The first stage of the disease, or even the second, may last for an indefinite time. There is no limit to be set for it.

DIAGNOSIS.

The diagnosis will rest upon the lights and shadows of the clinical picture. There is nothing pathognomonic. It seems rather queer that this disease should be of interest to the surgeon, yet it is a part of so many gastric and pelvic conditions, which may deceive the surgeon, and such patients may be submitted to unnecessary surgical operations. There are many such cases on record.

Among the diseases from which pellagra should be differentiated, there are two or three quite similar affections, and among them ergotism, which bears a close relation to pellagra in its exterior etiology. There are two other diseases in which pellagra does not bear such a close relation, and they are lathyrism and acrodynia. Many men have spoken of scurvy, leprosy and beriberi, all three of which should be easily differentiated from pellagra.

Among the skin lesions dermatologists speak of eczema, lichen and exfoliative dermatitis. In some cases mercurial and arsenical poisoning may simulate pellagra; also some of the functional neuroses. Again, dementia paralytica may in many respects simulate pellagra. The same may be said with regard to uremia and diabetic coma.

One disease which has attracted much attention is sprue. In its symptomatology sprue is closely related to pellagra. In sprue, there is an absence of skin manifestations; there is the early morning diarrhea; whereas in pellagra the diarrhea continues throughout the day; nevertheless many men have considered the two diseases quite closely related, and pellagra has been called sprue in this country several times.

Among the complications we find most frequently syphilis or tuberculosis and helminthiasis. Hookworms in the South and round worm are common in pellagrins, and amebæ are usually common in the cases of pellagra that have been seen in Illinois. Alcoholism is sometimes present. Malaria is a serious complication, but it has not been found frequently in the South. Some writers regard it as a serious complication, and when present adds gravity to the prognosis.

PROGNOSIS.

With regard to the prognosis there is a distinct difference between the asylum cases and those observed outside of asylums. The asylum type of the disease has a notoriously bad prognosis, and most of the patients die. The cases outside of asylums do much better on treatment. The earlier the diagnosis is made, the more successful the treatment, in my experience. I might mention several facts of importance in connection with the prognosis of the disease. Fever, for instance; if the case runs a temperature, the outlook is unfavorable from the standpoint of prognosis. If patients run a temperature over 100.5 or 101 F., they do badly. It is usually a signal of impending danger. The erythema which accompanies the disease is usually regarded by the older writers as having no relation with the prognosis whatever. For instance, Strambio held such a view, but our experience in this country has been that those patients who develop the wet type of erythema, with the formation of bullæ, frequently die. I understand that in Illinois there have been only a few cases of wet erythema, but in the South there are a great many. The complications play an important part in the prognosis. Recurrence should be looked for every season, and sometimes recurrences take place in the same season. I have known patients to pass recurrence in the spring, but in the fall have a recurrence which would prove fatal. Mental involvement adds to the gravity of the disease; and the diarrhea and emaciation end fatally.

TREATMENT.

With regard to treatment, let me say a few words, then I will show the slides. The treatment of pellagra should be divided into the preventive and medical treatment. With regard to the preventive treatment, again the subject of corn comes up. Our experience has been so limited that we must follow in the footsteps of those who have held to the corn theory until we have had a wider experience. Perhaps no government has worked so hard as Italy. She has tried everything and has struggled for many years without any great show of success until within the last few years, when they claim that they have been able to reduce the number of cases and the intensity of the disease. In doing this they have devoted their entire efforts to spoiled corn. They have made censuses of the disease, and have required reports of every case. They have established drying stations for the purpose of drying corn, so that it will not spoil. They have established economic kitchens, where the poor may buy good food at a cheap price, to prevent them from eating polenta. They have established sanitary stations, where the poor are

taken in every spring and treated and carried through the season. They have established exchange stations where poor corn may be taken and good meal obtained in place of it. They have established a system of education in regard to the caring for corn, and the harvesting of corn, as well as pointing out the dangers of bad corn. School children are taught the dangers of bad corn with the aid of pictures, and they have established a pellagralogic commission for each province of Italy, and an agricultural commission, and they are indefatigable in their propaganda against bad corn, in trying to teach the people to take proper care of the corn and to live on a varied diet. As a result of this, they have reduced the number of pellagrins from 100,000 to about 50,000. It is the opinion of most observers that they certainly have reduced pellagra in Italy, as the result of their efforts directed along the line I have indicated. Conclusions, however, are difficult to draw. At the same time, while they have adopted all these methods, there has been a proportionate rise in general prosperity all over Italy, and poor people are getting better food and a more varied diet than ever before, which makes a difference with a disease like pellagra. Pellagra, wherever it has appeared, has been regarded as a serious matter. It is perhaps not so serious numerically as some other preventable diseases, but it is a disease which seems to affect the poor particularly, the laboring classes, which are to a certain extent the backbone of the nation, and without killing so many it fills up the insane asylums and renders the afflicted unfit for work, and is a constant menace to the integrity of the peasant class of the people.

With regard to the medical treatment of pellagra, it is largely symptomatic and not very satisfactory. Lombroso introduced two remedies in the treatment of pellagra which have attracted much attention. First of all, he laid great stress on diet in treating pellagrins, and advised that they be fed more particularly with meat regardless of the diarrhea. He also introduced the use of arsenic and ordinary common salt. He gave Fowler's solution, and gave salt to children in the form of salt baths or rubs, and claimed to have obtained good results. Following his ideas, particularly in late years, since the appearance of atoxyl and soamin, these patients have been watched closely to see what effect these agents would have. Roumanian observers claim excellent results, but nobody else can duplicate them. I have used atoxyl and soamin in large and small doses, and continuously, or, as one gentleman put it, "Internally, externally and eternally," and I have seen very little benefit from them in asylum cases. Although in outside cases, I have seen much improvement, whether *post hoc* or *propter hoc,* I am not prepared to say. They show improvement not infrequently under hygienic treatment, without atoxyl. Dr. Babcock deliberately pushed atoxyl to the extreme limit in three cases in which it produced optic atrophy. It was given in large doses. He got three cases of blindness among a large number of patients. The ophthalmologist who examined these patients said he doubted very much whether the blindness could be attributed to the large doses of atoxyl. In administering the atoxyl he gave one-half gram on one day and repeated it the second day thereafter, making a gram in three days,

then a rest for ten days, and so repeating this double dose indefinitely. Arsacetin was introduced by Ehrlich and is a salt which will withstand boiling. Baths of various kinds, hypnotics, anodynes and bismuth for diarrhea have been given in pellagra, some of these agents doing some good. Local dressings for the hands have been applied.

There is one further feature in the treatment of pellagra worth mentioning, and that is the transfusion of blood by Crile's method, which was first done by Dr. Cole, of Mobile, Ala. He has transfused nine cases of pellagra, with six recoveries. At first, he used the blood from a recovered pellagrin for his donor, but afterward used the blood of any healthy ordinary individual, and seems to have obtained just as good results. The operation is not very difficult, if you are not dealing with insane patients, but it is difficult among patients who do not cooperate. Cole has brought out the value of this surgical principle in certain cases, but it is not a treatment that can be applied generally to an epidemic disease. Lastly, pellagra is a public health problem, and promises to be of larger importance. Great interest is being taken in the subject at the present time, and it is a disease that demands the very best thought and work of the American medical man.

PELLAGRA.*

W. J. MacNeal, M.D.

Assistant Chief in Bacteriology in the Laboratory of Physiological Chemistry, University of Illinois.

URBANA, ILL.

Introduction.—During the spring of 1909, Dr. C. F. Williams, Secretary of the State Board of Health of South Carolina, sent a letter of inquiry about pellagra to the superintendents of the State Insane Hospitals of the country. These letters came to the attention of the Illinois superintendents during July and August, and served to direct their attention to the possible presence of pellagra in the institutions under their charge, and cases of the disease were soon found, first at Dunning and later at the Peoria and Kankakee hospitals. This recognition of the disease in the state institutions has produced somewhat of a sensation because of the current statements in our books that pellagra is a disease due to eating spoiled corn, and that it is unknown in the United States; and the presence of the disease might therefore imply improper conduct of our state hospitals. Even on more sober reflection, the interest in pellagra has still been sustained, because it was soon recognized that the disease is already widespread throughout the southern states, and present here and there throughout the rest of the country, that it is likely to become more prevalent, that there are no known effective methods of restricting its advance, or of stamping it out, and that its causation is by no means settled. Another reason why Illinois is especially interested rests upon the fact that we are the greatest corn-producing commonwealth in the

* An address delivered at an assembly of the College of Science, University of Illinois, Dec. 2, 1909.

world, and the reputation of Illinois corn as a wholesome food is of some commercial importance.

What, then, is pellagra? The descriptions of the disease accessible to the average American physician previous to 1909 were indeed few. Since its recognition here the South Carolina State Board of Health, the United States Public Health and Marine-Hospital Service and various southern physicians and others have published a considerable amount of literature giving the present state of the world's knowledge of pellagra. It is largely from these sources that I have drawn the ideas I shall present to you this afternoon.

History and Present Extent of Pellagra.—The first authentic account of the disease we now call pellagra was given by Gaspar Casal in 1762. He had studied the disease in Spain, where he observed cases as early as 1735. From the characteristic changes in the skin, Casal named the disease "mal de la rosa," and considered it a kind of leprosy. In Italy the disease seems to have made its appearance about 1750 and was first described there in 1771 by Frapolli of Milan, who gave it the name pellagra (Italian, *pelle,* skin, and *agra,* rough). In France it was first recognized in 1818, in Roumania in 1833, and in the Island of Corfu in 1839; more recently in Austria, Turkey, Greece and Poland. In Africa the disease was first recognized by Pruner in 1847, and recently, Sandwith has shown that pellagra is very prevalent in lower Egypt. He also found cases in South Africa. It has been reported from India, Brazil, Mexico, the Argentine Republic and the West Indies. At present it is most prevalent in Italy, where there are about 100,000 recognized cases, and in certain parts of Egypt, where Sandwith examined the peasants at work in the fields and found from 15 to 62 per cent. of them afflicted with this disease.

In the United States two cases of probable pellagra were reported in 1864 by Dr. Gray, of Utica, N. Y., and Dr. Tyler, of Somerville, Mass. In 1902, Dr. Sherwell recognized a case in a sailor aboard ship in New York, and in the same year Dr. H. F. Harris, of Atlanta, Ga., reported one case presenting the classic symptoms of the disease, and thought it possibly true pellagra. Searcy,[1] in 1907, described an epidemic of pellagra in the Alabama Hospital for the Colored Insane, in which there were 88 cases with 57 deaths. He states that a few cases of the unrecognized disease had existed in the hospital as far back as 1901. In the same year, the staff of the South Carolina Hospital for the Insane at Columbia made a report to the State Board of Health concerning pellagra in South Carolina, and in 1908 the American disease was definitely identified with the pellagra of Europe by Dr. J. W. Babcock and Dr. J. J. Watson, of Columbia, S. C., who made a visit to Italy to study the disease there. A local conference on pellagra was held at Columbia, S. C., in November, 1908, and in October of this year a second conference, which assumed a national character, was held at the same place. The presence of the disease was reported in all the southern states and in several of the northern states, most prominent among which, from the standpoint

1. Jour. Am. Med. Assn., 1907, xlix, 37.

of the number of cases, was Illinois. A National Association for the Study of Pellagra was organized, and this organization will meet at Peoria, Ill., in June, 1910. It seems probable that pellagra has existed unrecognized in South Carolina, North Carolina and Georgia for twenty or thirty years. This is the opinion of the asylum authorities. In Illinois, Dr. Zeller is certain of its presence for at least two years, and believes it to have existed in the Peoria Hospital for seven years. The recent apparent extension of the disease is then partly due to the recognition of cases already existing, but besides this, there is an actual real increase in the number of pellagrins in the last few years, and many students of the disease expect a further spread in the near future.

Symptomatology and Diagnosis.—The failure to recognize pellagra is not so remarkable, for it is a disease presenting various symptoms. Indeed, some observers would deny that pellagra is a pathologic entity, and consider its symptoms as due to several unrelated causes. Most cases, however, conform more or less to a fairly definite type. The premonitory or prodromal symptoms are mild and not characteristic. There is usually some digestive disturbance, loss of appetite, burning sensation in stomach, and most frequently some diarrhea, accompanied by inflammation of the mouth and salivation. Soon afterward there is a disinclination to exertion. The victim dreads his ordinary duties, and procrastination takes the place of former promptness. He becomes negligent of his personal appearance. These are signs of the psychic depression which later forms so prominent a feature of the disease.

After some time, varying from a few weeks to several months, during which the diarrhea and attendant inflammation of the mouth may persist, the skin lesions appear. The eruption first appears as a dry erythema on the backs of the hands, extending up the forearm to the lower border of the shirt sleeve. In the vast majority of cases it appears first in the springtime and frequently after exposure to sunlight. Indeed, the disease has been called "Vernal Insolation," and many of the American cases have at first been mistaken for sunburns. The erythema appears also upon the face, the neck, and upon the feet and ankles, although less frequently. It is symmetrical in distribution, selecting particularly the extensor surfaces, not covered by clothing. Later the flexor surfaces may be involved, but as a rule the palms of the hands and the soles of the feet remain unaffected. Cases with universal eruption have, however, been described. There is first a reddening of the skin with some edema; after a few days blisters may form. The eruption then dries and small grayish scales form and fall off. The skin remains pigmented, a brownish or plum color. Repeated attacks of this erythema occur during the summer and the skin may become much thickened, cracked and fissured. With the approach of winter the manifestations of the disease subside and the patient may consider himself cured, but the eruption appears again the next spring, with the associated digestive disturbances.

The skin eruption is the most characteristic thing about pellagra, without which it is practically impossible to be certain of the diagnosis. The eruption appears on the exposed parts, is symmetrical in distribution

and leaves a peculiar pigmentation on the skin. It is usually painless, only a slight itching or burning sensation being present. In fact, the patients are more disturbed by the unsightly appearance than anything else.

Evidences of involvement of the nervous system usually appear early in the course of the disease, such as the fairly constant exaggerated knee-jerk and a mild grade of melancholia. Later on, delusions occur, and there is sometimes a tendency to suicide, especially by drowning. In Italy about 10 per cent. of the cases become insane. As the disease advances the patients talk less and less and finally may become absolutely mute.

In uncomplicated cases there is as a rule no fever, although in some rapidly fatal cases a temperature of 106 to 107 has been observed. The blood changes are those of a moderate secondary anemia, with possibly a slight relative increase in the large mononuclear cells.[2]

The Recognition or Diagnosis of pellagra rests upon: (1) Diarrhea; (2) inflammation of the mouth with salivation; (3) skin eruption; and in some cases is confirmed by (4) nervous manifestations. For the purpose of treatment it is very important that the physician should recognize the nature of the disease before the skin lesions appear, but Dr. Lavinder maintains that such diagnosis cannot be made with scientific accuracy. In insane hospitals, where observation of many cases has made the attendants familiar with the disease, it is often recognized and a provisional diagnosis made upon the digestive disturbances alone. This cannot be done with safety by those not thoroughly familiar with the disease.

In the differential diagnosis of the skin lesions, sunburn, scalds and syphilis may cause confusion. The symmetry, selective distribution and color of the eruption characterize it.

Course of the Disease.—The progress of pellagra is exceedingly variable, as some die in the first acute attack, while others survive recurrences for twenty years, with only moderate deterioration of mind and body. In general, the progress is gradual, increasing with each recurrence, toward mental and physical inefficiency, progressive wasting and death in extreme cachexia, unless an intercurrent infection ends the patient's life before that stage is reached. In children the progress of the disease is usually more rapid. Of great economic importance is the fact that pellagrins become incapable of caring for themselves long before their death, so that the community is frequently burdened with caring for them.

Complications.—The complications of pellagra are numerous and varied, for it is a disease of the poorer classes and they are likely to have other diseases also. Of particular interest is its frequent association with the presence of animal parasites. Thus in Egypt, according to Warnock, nearly every pellagrin suffers from bilharzia disease and many of them from ankylostoma also. In the southern United States the hookworm is generally found in pellagrins, and in some places, as, for example,

2. At this point a number of lantern slides were shown, illustrating the various types of the skin eruption and the several stages of the disease.

at Peoria, intestinal amebæ are present in a large proportion of the cases. It is generally supposed that the disease pellagra predisposes to infection with these parasites, but some of the observed symptoms, such as the anemia and emaciation may be, in part, caused by them.

Pathologic Anatomy.—The pathologic anatomy of pellagra is obscure because the material available for post-mortem examination has consisted for the most part of chronic cases, unsatisfactory on account of intercurrent infections and senile changes. There is general atrophy of the parenchymatous organs, wasting of the adipose and muscular tissues and brittleness of the bones. In the spinal cord the changes are fairly constant and important; degenerations of the lateral columns in the dorsal region and of the posterior columns in the dorsal and cervical regions. The skin changes consist of congestion, then thickening and pigmentation, and finally atrophic thinning. In the intestine, besides atrophic thinning of the wall, ulcers also occur. Whether these ulcers are in every case lesions of pellagra or due to complications of the disease (ameba, ankylostoma), is not entirely certain.

Etiology.—The question of the causation of pellagra is a most interesting one, and although there are many theories about its causation, no one of them has been clearly worked out and proved. It has been considered a modified leprosy; it has been ascribed to sunshine, poverty, insanitary dwellings, syphilis, irritant oils, bad water, alcohol, garlic, onions and corn (Sambon).

In 1810 Marzari first called attention to the relation between maize and pellagra. In 1845 Ballardini ascribed the disease to a mold, *sporisorium maydis,* which he found in the greenish discoloration so frequently seen in the germ groove of corn (maize) grains. With this fungus he produced diarrhea in man, and loss of feathers and general wasting in fowls. A special commission appointed to test Ballardini's discovery made an unfavorable report, chiefly because the same mold was often found on corn where pellagra was unknown. The same objection may be raised to the acceptance of all the other various micro-organisms of corn to which pellagra has from time to time been ascribed, such as the *penicillium glaucum* incriminated by Lombroso and maize smut (*ustilago maydis*) incriminated by Pari. The study of the micro-organisms of corn has been diligently pursued by a long list of investigators, and many of them have isolated different species, with cultures of which they claim to have produced pellagra in animals or in man. The peculiar nature of pellagra, its symptoms and anatomic lesions, as well as its epidemiology, show clearly that its cause must always be the same specific thing, and not any one or several of the various molds and bacteria which these various investigators have obtained from corn. Not much reliance can be placed, therefore, on the work which has been done in this field.

In 1871 Lombroso, the renowned Italian physician, sociologist and criminologist, who died a few weeks ago, carried out experimental investigations which are the basis of the present Italian theories of pellagra. He showed that certain poisonous substances are produced in the parenchyma of decomposing corn through the activity of saprophytic micro-

organisms, and he was able to separate these poisons, obtaining a toxic watery extract, a toxic alcoholic extract and a poisonous red oil. By means of these substances he produced symptoms in man and animals which were considered characteristic of pellagra; in man, vomiting and diarrhea, scaling of the skin, malnutrition; in fowls, diarrhea, loss of feathers and death; in rats, wasting, convulsions and death. It is to be noted that the micro-organisms producing these poisons in the corn proved harmless in themselves when injected into or fed to animals.

Against these experiments it has been shown that similar poisons may be obtained in the same way from wheat and other cereals, and in 1881 Monselice collected damaged maize from pellagra districts, but was unable to obtain any poisonous alkaloid from it. He remarks that artificially fermented maize and ordinary damaged maize are two very different things.

Pellagra is a disease which is characteristic only in its entire clinical picture. The production of diarrhea, loss of hair or of feathers, emaciation and death, is not the production of pellagra, and the micro-organisms or chemical poisons which produce these results may or may not have anything to do with pellagra. The proof is still lacking. Still, since the days of Ballardini, the causal relation of fermented corn to pellagra has been the most generally accepted theory.

This relation has been summed up in a recent paper by Sandwith, the English authority, as follows: "1. In districts where no maize is cultivated or habitually eaten, pellagra does not exist. 2. There are many districts where maize has been cultivated for many years and yet pellagra has not appeared. 3. Well-to-do people in pellagra districts, living on a varied diet and consuming maize as an occasional and not as a staple cereal, usually escape pellagra. 4. It is not good maize or good maize flour which produces pellagra; the disease requires for its production the habitual use of damaged maize in some form. Many Italian investigators regard *penicillium glaucum* as the specific poison-producing agent."

Accepting the causal relation of corn to the disease, there are various possible explanations of its mode of action, all requiring the presence of undetermined micro-organisms. 1. Pellagra may be due to chemical poisons formed in the fermentation of the corn, these poisons being absorbed after ingestion of the corn and producing the symptoms of the disease. It is well known that fermentation of various grains will produce such chemical poisons, alcohol, for example. 2. The disease may be caused by a parasitic fungus of the corn whose very substance is poisonous, such as, for example, ergot. 3. It may be that the corn introduces into the digestive tract some micro-organism which establishes itself there and produces poisons which are absorbed. These suppositions do not, by any means, exhaust the possibilities of the case, but in the absence of exact knowledge further speculations are useless.

Although the dependence of pellagra upon use of maize as a food is quite generally accepted, it is not established by conclusive evidence, and some careful students of the disease regard this maize theory as erron-

eous. Dr. L. W. Sambon,[3] of Naples, in a lecture at the London School of Tropical Medicine, has reviewed the evidence from this point of view. He shows that the common belief that Indian corn and pellagra were both introduced into Europe from South America, rests upon very insecure evidence, and that in fact, Frapolli himself believed pellagra to be a disease of great antiquity. Again, Manson, the great English authority on tropical diseases, says: "The disease is pellagra when it fits in with the orthodox theory and when it can be connected in any way with maize; but when this is not possible, the disease becomes pseudo-pellagra." Recently Warnock has shown that in the Insane Hospital at Cairo, Egypt, where the diet is absolutely free from corn in any form, still insane patients who have lived in the hospital for years without any symptoms of pellagra, develop the disease there and sometimes die of it. In general, it may be said that the present opponents of the "maize theory" regard pellagra as an infectious disease caused by an unknown specific parasite, probably communicable in an indirect way.

The history of pellagra in the United States is hard to account for upon the zeitoxic theory of Lombroso. For what is the cause of the present spread of pellagra here, and why have we not had the disease before? Corn has been a staple article of diet in the South for a long time and for the negro slaves it was the principal food. In the years following the Civil War the South has certainly had its share of poverty, and corn of a poor grade must have been consumed there very frequently by the whites as well as by the negroes. The absence of pellagra from the United States has presented an interesting problem to foreign students of the disease and the explanation offered by them has been this: "The word poverty represents no condition in America which can compare with the misery of the impoverished peasants in Italy, Roumania and Egypt" (Sandwith). It is remarkable that now, just as the South is in the midst of an industrial and commercial reawakening, the disease should appear there, attacking not only the very poor, but also those of moderate financial means. We may assume that the disease has existed in this country for decades, and indeed some competent observers have seen cases several years ago, unrecognized at the time. But such cases cannot have been very numerous or some one would certainly have reported them. We are forced, then, to search for some factor, introduced into the United States in recent times, to explain the present spread of pellagra.

The methods of harvesting and marketing the corn crop have undergone a change in recent years, the grain now being harvested earlier, sometimes shelled before it is well dried and then stored in elevators, where it is tightly packed and liable to ferment. This may have an important relation to the recent spread of pellagra, and some of our southern fellow-countrymen think that this applies particularly to the maize of the corn belt. Another assumption which would serve to explain the present spread of the disease is that pellagra is due to a definite specific micro-organism which finds in corn a medium for its propagation

3. Brit. Med. Jour., 1905, ii, 1272-1275.

and transmission; that not all fermented corn, but only that containing this germ is likely to produce pellagra, and that we have eaten fermented corn with impunity until this specific cause was introduced from abroad and scattered over the country. This assumption offers many interesting possibilities, but there is no scientific evidence to support it. The uncertainty in the minds of American physicians in respect to this question is expressed by the resolutions of the recent National Conference on Pellagra:

"*Resolved,* That, while sound corn is in no way connected with pellagra, evidences of the relation between the use of spoiled corn and the prevalence of pellagra seem so apparent that we advise the continued and systematic study of the subject, and in the meantime, we commend to corn growers the great importance of fully maturing corn on the stalk before cutting same."

Government and state inspection of corn-food products was also recommended.

Prognosis.—The outlook in pellagra is always serious, but if the disease is recognized early in its course, before mental and physical deterioration has appreciably progressed, recovery may be secured in the majority of cases. In later stages the arrest of the disease is more difficult and permanent impairment of the faculties remains. After marked emaciation has occurred, death is the rule. The high mortality rate reported in the American cases is in part due to the fact that these are for the most part patients in a late stage of the disease when first recognized. Patients who have apparently recovered from pellagra may again come down with an acute attack after many years.

Treatment.—Diet is of primary importance in the treatment. Corn and all corn products should be rigidly excluded. Cases progressing favorably may relapse at once after eating perfectly good corn products. The food should consist largely of milk, eggs and meat, in liberal amount. Among drugs, arsenic, as Fowler's solution or as atoxyl, appears beneficial in some cases. For the dry skin lesions, no treatment is of special benefit. A bland ointment, such as zinc oxid, may be used. For moist lesions and ulcerations, appropriate dressings should be applied. Treatment is often disappointing, and too much should not be expected from forced feeding, for in some hospitals cases develop in the tuberculosis wards while taking the highly nutritious diet for this disease.

Prophylaxis.—The restriction and prevention of pellagra must rest upon knowledge of its causation; otherwise our efforts at prevention are mere stabs in the dark. This principle is well illustrated by the present efficiency in prevention of yellow fever as compared with the futile efforts of the last century, as was so clearly pointed out to you by Professor Burrill a few moments ago. In pellagra, the knowledge that we have points to maize as a factor in causation, and to prevent pellagra it should only be necessary to stop eating maize, and above all, damaged maize. The proper inspection of corn food products should prevent the use of the latter for human food. In Italy, where the government has undertaken the prevention of pellagra on a large scale, they are proceeding upon this plan. The disease has not been stamped out, as yet,

although the total number of cases appears to be decreasing. On the other hand, the disease seems to be spreading slowly to new parts of the country, so that the total pellagrous area is increasing in extent. Sambon regards the present Italian program for the control of pellagra as wholly ineffective.

Dr. C. H. Lavinder,[4] of the United States Public Health and Marine-Hospital Service, discusses, in a recent paper, the prevention of pellagra, and considers fully the question of quarantine which has been raised in some parts of the country. Although we do not know all about the causation of pellagra, it is very certain that it is not readily transmitted from man to man. This is the experience of the whole world. If it is a poisoning by spoiled corn, quarantine is, of course, utter foolishness. Even if pellagra is a true infection, the mode of its transmission is wholly unknown, and effective quarantine is therefore impossible. There is, then, no reason for attempting a segregation or quarantine of this disease in the present state of our knowledge.

The question of communicability and quarantine in pellagra has been raised by Dr. J. M. King and his colleagues at Nashville, Tenn., and it is only fair to present the scientific observations which prompted them to raise the question. Dr. King observed at Nashville two groups of cases. One group at the Baptist Orphanage consisted of 17 cases. The other group consisted of two cases occurring 14 miles in the country, and he also reported one single case. There appears to be no doubt that these were true pellagra, the diagnosis having been confirmed by Dr. Lavinder. Greatest interest centers in the group of cases in the Baptist Orphanage. Near Nashville there are three state charitable institutions, one county institution and this Baptist Orphanage. The number of inmates in the last named is about 75, in the others much larger. All these institutions use the same dietary and the same quality of foods. No other institution, except the Orphanage, had any cases of pellagra, although most careful search was made for them. The evidence shows that the disease was introduced into the Orphanage by four children from a destitute family, the youngest child being affected upon admission. The three other children became affected later and thirteen other cases developed in the Orphanage, in children coming from various parts of the state. Every evidence indicates that they contracted the disease in the Orphanage. From these observations, Dr. King considers that the disease appears to be infectious or in some unknown way communicable. He does not, however, advocate quarantine, and this is certainly not justified by our present knowledge of pellagra.

In conclusion, let me say that the recognition of pellagra in this country has aroused the attention of the whole world, and Europe is hopefully looking to the United States for a solution of the pellagra problem. Let us hope that Illinois may do her part.

4. Public Health Reports, Oct. 29, 1909.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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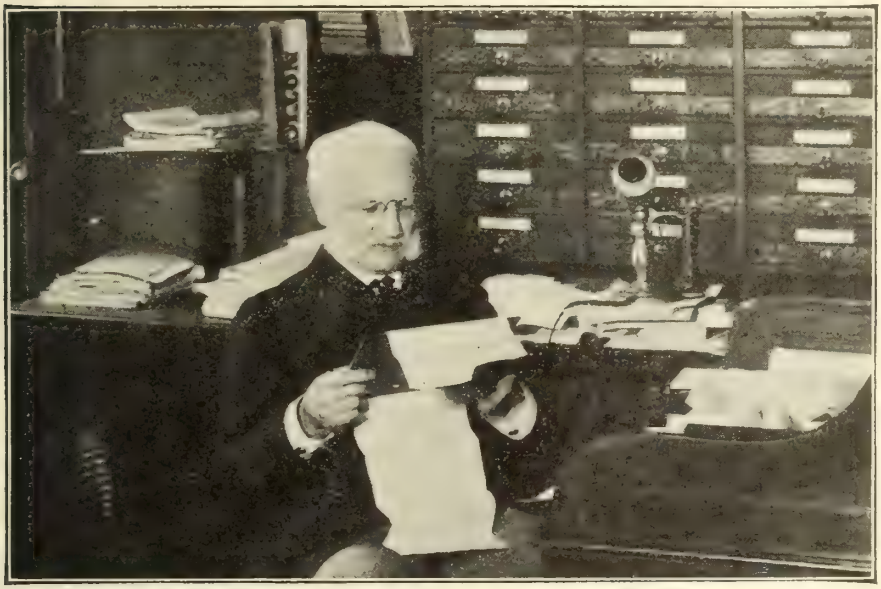
JANUARY, 1910.

DR. FRANK W. REILLY.

Dr. Reilly, for many years Assistant Commissioner of Health of Chicago, and who is largely responsible for the success in solving that city's water and sanitation problems, died at his residence, 745 Lincoln Boulevard, Dec. 16, 1909. Dr. Reilly had been ailing for more than a year, and was nearly 74 years old. He was born in Bolton, England, but was brought to this country in childhood and was educated in the public schools of Philadelphia. He graduated from the Chicago Medical College in 1861. He enlisted as volunteer surgeon and was later promoted to the surgeonship of the Twenty-sixth Illinois Infantry, with the rank of major.

At the close of the war, Dr. Reilly returned to Chicago, and in April, 1867, was appointed Sanitary Inspector. In this position he became associated with Dr. J. H. Rauch, and this intimacy was only terminated by the death of Dr. Rauch. He served from 1873 to 1879 in the Marine-Hospital and Sanitary Service of the then National Board of Health. In 1881 he returned to Illinois and for some years resided in Springfield as Assistant Secretary of the State Board of Health. A great deal of the success of Dr. Rauch's administration as Secretary of

the State Board of Health was due to Dr. Reilly. During the smallpox epidemic of 1882-1883 Dr. Reilly did herculean service under Dr. Rauch's direction. In 1894 he again entered the service of the Chicago Health Department, and continued to be associated with that department until his death, being appointed Assistant Commissioner in 1895. "His appointment marks the beginning of efficient administration of sanitary affairs in that city. His thorough knowledge of medicine—especially preventive medicine—his keen sense of its application, his force and enthusiasm and his evidently unselfish devotion to the service was an inspiration and stimulus to his co-workers. His work, never spectacular, always forceful and effective, has contributed most to the reputation and high standing that the Chicago Department of Health now



Dr. Frank W. Reilly—"Chicago's Most Useful Citizen."
Discoverer of the Value of a Health "Story."

Courtesy of the Bulletin, Chicago Department of Health.

enjoys in the sanitary world. Dr. Reilly was the first to conceive the idea of publishing a weekly health bulletin which should contain a review of the city's health and drive home a simple lesson in the prevention of unnecessary sickness and death. As an educative factor, this *Bulletin* has received signal recognition throughout the English-speaking world. To Dr. Reilly belongs the credit."

The newspapers of Chicago almost without exception pronounced Dr. Reilly "Chicago's Most Useful Citizen."

The various Commissioners of Health under whom Dr. Reilly served united in expressions of appreciation of his work in the *Bulletin* of Dec. 18, 1909.

Finally, we will say that Dr. Reilly was appointed Secretary of the State Board of Health in 1897 by Governor Tanner, with the understanding that the Board was to be taken out of politics and prominent citizens and physicians of high character and attainments were to compose the Board. It is a matter of tradition that Dr. Reilly was on his way to the depot to take the train to Springfield when he saw by the evening papers that Governor Tanner had failed to carry out the stipulation regarding the members of the Board promised to Dr. Reilly. Dr. Reilly at once returned to his home and dictated his resignation. What would have been the history of the Board had this unfortunate mistake of Governor Tanner not been made, we can only imagine. We can be sure, however, that the Board would at least have continued to maintain the high position given it during the administration of Dr. Rauch.

RECIPROCITY BETWEEN JOURNALS OF THE STATE MEDICAL SOCIETIES.

From time to time we have called attention to the fact that nearly all of the state medical societies of the Union have adopted THE JOURNAL idea instead of the yearly volume of transactions, and frequently have called attention to the valuable contents of the various state journals. We believe there is still a great opportunity for development of the state journals along the lines of reciprocity between the various organizations. With this object in view, we have addressed the following letter to the various editors of the state medical society journals, and have received answers from a number of them, at least five endorsing the idea and others holding it in abeyance until the officers of the organization could be consulted in regard to the matter.

We now bring this subject to the attention of our readers in the hope that many of them will be interested in taking it up, and believe that with proper encouragement this feature can be made a distinct success and of value both to THE JOURNAL and the subscriber.

Many of our members reside along the borders of the state of Indiana, and to them the *Indiana Medical Journal* at the remarkably low price of $1 per annum would appeal, because they are interested in the doings of their Indiana brethren, know many of them personally and are in the habit of visiting back and forth with the brethren of that state. One of our most important societies, the Æsculapian Society of the Wabash Valley, has as many members in Indiana as in Illinois, and this idea of reciprocity should particularly appeal to them.

The same might be said regarding the practitioners residing along the borders of Wisconsin, Iowa, Missouri and Kentucky. The *Ohio State Journal* will appeal to the many graduates of the Ohio schools residing in this state, and also because the productions of such men as Ransohoff of Cincinnati, Baldwin of Columbus and Crile of Cleveland will be found in the columns of the Ohio journal.

The *Minnesota State Journal* contains many articles from the Mayo clinics of Rochester, and is well worth the cost of the annual subscrip-

tion. St. Louis is the medical center for a large portion of southern Illinois, and these members would undoubtedly be interested especially in the Missouri journal. The California journal is one of the most independent and attractive journals published. The Texas journal is clean and newsy, and will appeal to many of our readers interested in medical conditions in that vast empire. Probably every other state journal would appeal to some member of our Society.

On the other hand, the ILLINOIS MEDICAL JOURNAL, with its numerous pages (from 1,600 to 2,000 annually) of original articles and society reports, should appeal not only to our neighbors, but to many society members in all parts of the country. Chicago being now one of the greatest, if not the greatest, medical center in America, issues annually from her clinics and medical schools matter of the very highest importance to the medical profession, much of which can only be obtained from the columns of the ILLINOIS MEDICAL JOURNAL. Every month the editorial office receives demands for copies of THE JOURNAL from all parts of the United States, and even from Europe. There would seem to be no reason why our circulation should not be doubled.

We would like to have our members consider this project seriously and give it all the support possible.

My Dear Doctor:

I have had in mind for some time to propose a sort of reciprocity between the journals of the different state medical societies, and after talking with the chairman of our publication committee have decided to write you concerning the matter.

It seems probable that many members of each state medical society would profit by reading the issues of the journals of the other state societies and would be likely to become subscribers to one or more of these journals, if they were permitted to subscribe on the same terms as the members of the particular state society issuing the journal, and with this object in view I have to propose that you bring this matter before your publication committee at the earliest possible moment, to see whether some such inducement may not be offered to the members of our society on the part of your journal, and thus you may secure a number of subscribers from our membership. On the other hand, we would offer to your membership the ILLINOIS MEDICAL JOURNAL at the price we are giving it to our own members, namely, $1.50 instead of the ordinary subscription of $2.00 charged to outsiders under the present circumstances.

I believe that this proposition will appeal to many hundreds of practitioners throughout the United States, and in this way the common interests of all journals might be very much advanced.

I think the only limitation that should be put upon such a proposition in our state would be that the journals of other states, in their advertising columns, conform to the rules laid down by the A. M. A. committee in their advertising columns.

Probably your journal conforms to these rules at this time, but if not it might be more profitable for you to drop some of the questionable advertisements for the sake of securing subscriptions from our membership.

Please let me hear from you regarding this matter at your earliest convenience, and greatly oblige,

Yours very truly,

M. D., Editor.

THE NATIONAL BUREAU OF HEALTH.

President Taft, in his last message to Congress, takes occasion to urge the formation of a National Bureau of Health by the consolidation of the Marine-Hospital Service, now under the direction of the Treasury Department, the Pure Food Commission, now under the direction of the

Department of Agriculture, and the various other departments and bureaus into one compact body which shall be known as The National Bureau of Health. The President takes occasion to say that "in the nature of things the medical department of the Army and the medical department of the Navy must be kept separate."

Of course, the medical department of the Army and Navy must be kept separate, as the President states, but there should be no reason why there should not be consolidation and the formation of a public health bureau. The only disappointment is that he does not go further and advocate a complete department devoted to this one subject, as is done in many of the European governments. However, it will be up to the bureau, should it be established, to make its importance so felt that a complete department will in a few years become a public necessity.

The facts regarding the plague situation in San Francisco should appeal as an argument for the establishment of the National Bureau of Health. State interests kept hidden for many months the fact that plague existed in San Francisco, and no serious work was undertaken for its eradication until the Marine-Hospital Service of the United States took the matter up, and very soon relief was obtained.

Thus it is in a great many parts of the country unwillingness to assume responsibility for local conditions for fear of temporary harm becomes a menace to the health of the entire nation, and the only relief will be for the United States Government to assume the burden without fear or favor.

It will now be up to the members of the medical profession to urge the importance of the matter thus initiated by President Taft, and by stimulating appeals to members of Congress secure the necessary legislation.

President Taft's language upon this subject is as follows: "For a very considerable period a movement has been gathering strength, especially among the members of the medical profession, in favor of a concentration of the instruments of the national government which have to do with the promotion of public health. In the nature of things the medical department of the Army and the medical department of the Navy must be kept separate. But there seems to be no reason why all the other bureaus and offices in the general government which have to do with the public health or subjects akin thereto should not be united in a bureau to be called the 'bureau of public health.' This would necessitate the transfer of the Marine-Hospital Service to such a bureau. I am aware that there is a wide field in respect to the public health committed to the states in which the federal government cannot exercise jurisdiction, but we have seen in the Agricultural Department the expansion into widest usefulness of a department giving attention to agriculture, when that subject is plainly one over which the states properly exercise direct jurisdiction. The opportunities offered for useful research and the spread of useful information in regard to the cultivation of the soil and the breeding of stock and the solution of many of the intricate problems in progressive agriculture have demonstrated the wisdom of establishing that

department. Similar reasons of equal force can be given for the establishment of a bureau of health that shall not only exercise the police jurisdiction of the federal government respecting quarantine, but which shall also afford an opportunity for investigation and research by competent experts into questions of health affecting the whole country or important sections thereof, questions which in the absence of federal governmental work are not likely to be promptly solved."

SECOND EDITION OF THE AMERICAN MEDICAL DIRECTORY.

The second edition of the American Medical Directory, under date of 1909, from the American Medical Association press, 535 Dearborn Ave., Chicago, has just reached us and we take pleasure in calling the attention of our readers to this valuable volume. It contains 10 per cent. more names and 20 per cent. more matter than the edition of 1907. The records of medical colleges, state boards and other sources of information have been carefully scanned to make the work complete. Two additional items have been added to the information given regarding each physician, and an attempt has been made to establish a standard by which specialists could be determined. This, while incomplete in this volume, will assist in a complete roster of specialists in a future volume. Our readers are requested to make such additions and corrections as may come to their notice in this volume, and we trust it will have a wide circulation as the only authentic record of the national organization. One criticism may not be out of place, and that is in regard to the population, which is based on an estimate of 1903 in every state and city, with the possible exception of Chicago and other larger cities. A little more effort would have obtained a fairly accurate estimate of all cities of more than 10,000 population, and especially of the states, which would have added considerable value to the volume. Outside of this, there is little to criticise in the book, which improves with each edition.

NOTICE.

TREASURY DEPARTMENT,

BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,

WASHINGTON, D. C., Dec. 2, 1909.

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street SE., Washington, D. C., Monday, Jan. 24, 1910, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. Officers are entitled to furnish quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

FENGER MEMORIAL ASSOCIATION.

The directors of the Fenger Memorial Association have decided to set aside $400 for 1910 to aid in medical investigation. Applications with the necessary details should be sent to the secretary, Dr. L. Hektoen, 1743 W. Harrison Street, Chicago, not later than Feb. 1, 1910. This money is derived from the Fenger Memorial Fund, which has been created by subscriptions in honor of Dr. Christian Fenger of Chicago, who died in 1902, the income of which will be used to further medical investigation.

LECTURE BUREAU ILLINOIS STATE MEDICAL SOCIETY.

Secretaries and program committees desiring lecturers should communicate directly with the Secretary of the State Medical Society and not with the individual lecturer. They should send in the request in ample time, *at least* three weeks prior to the meeting. Give date, place and probable attendance. Several names should be selected.

Address all communications to Dr. E. W. Weis, Secretary, Ottawa, Ill.

The following additional lecturers have volunteered to address the County Societies on the subjects indicated:

Medicine.—Dr. C. W. Lillie, East St. Louis, Ill.; Dr. E. W. Fiegenbaum, Edwardsville, Ill.; Dr. E. H. Butterfield, Ottawa, Ill.

Eye.—Dr. A. B. Middleton, Pontiac; Dr. George Adams, East St. Louis.

Genitourinary.—Dr. F. Kreissl, Chicago; Dr. J. S. Nagel, Chicago.

Surgery.—Dr. W. F. Newcomb, Champaign; Dr. E. W. Andrews, Chicago.

Rectum.—Dr. F. C. Vandervort, Bloomington.

Public Health and Preventive Medicine.—Dr. Henry B. Hemenway, Evanston.

Address all communications to E. W. Weis, Secretary, Ottawa, Ill.

Correspondence.

VISITS TO SURGICAL CLINICS IN ENGLAND.

NELSON M. PERCY, M.D.

Attending Surgeon to St. Mary's of Nazareth Hospital; Junior Surgeon to the Augustana Hospital; Instructor in Surgery in the Medical Department of the State University of Illinois.

CHICAGO

VISIT TO SIR VICTOR HORSLEY'S CLINIC OF LONDON.

Sir Victor Horsley does wonderful brain surgery and his asepsis is very good. The area of operation is irrigated constantly from the time the operation is begun until it is completed. Very few instruments are used in performing the entire operation. He always makes a very large skin flap, and unless he makes a very large bone flap he does not replace the bone. The opening is made with a large trephine, then with a large bone forcep the desired area of bone is cut away. When it is desired to expose an especially large area a square flap is made with an ordinary saw. In one case of idiopathic epilepsy, a flap of bone six inches square was removed, the dura was excised and the wound was closed without a drain. The hemorrhage from the edge of the bone was controlled by cutting off a small piece of periosteum from the under side of the skin flap and placing it over the bleeding area, making slight pressure for

about five seconds. In this case of epilepsy the overlying bone was thickened and congested. There was some increased intracranial pressure.

In cases of brain tumor he usually performs the operation in two stages. At the first operation he trephines and raises a very large bone flap, controlling all hemorrhage very carefully. The flap is carefully replaced and a dressing applied. One week later the patient is again anesthetized and the tumor is removed. I saw a tumor removed from the left parietal region, the primary operation having been done the Saturday previous. In another case a diagnosis of brain tumor was made. The skull was opened and cortical softening was found. The skull was closed without drainage. A diagnosis of brain tumor was made in another case which had been under observation for one month. On the morning of the day set for the operation, the patient was suddenly taken with severe pain in the back of the head. We saw the patient one hour later, and while the history was being read previous to an examination, the patient died. Mr. Horsley said there was no doubt about the diagnosis of brain tumor, and he felt certain that the cause of sudden death was a hemorrhage into the tumor. He remarked that he had seen several such cases of hemorrhage into the tumor, and in these cases had been able to demonstrate that there had been hemorrhage into the tumor three separate times.

VISIT TO MR. MAYO ROBSON'S CLINIC OF LONDON.

Mr. Robson had one interesting case. The clinical diagnosis was interstitial pancreatitis. The pancreas was found to be markedly enlarged and the gall-bladder was found to be very large and flabby, but not at all distended. No stones were found. The patient had never been jaundiced. An anastomosis was made between the gall-bladder and duodenum with needle and thread. On opening the gall-bladder, while making the anastomosis, some black sandy bile was seen. Mr. Robson drains the gall-bladder into the duodenum in all cases of pancreatitis, believing that better results are obtained by this method than by draining temporarily. In cases of simple gall-stones and cholecystitis external drainage is made. In three cases of pancreatic glycosuria, cholecystenterostomy was performed with excellent results. In each case the sugar disappeared from the urine and the patients are enjoying fairly good general health.

Mr. Robson's technic and asepsis are excellent. At present in gall-bladder work he does not split the rectus muscles. The fascia is cut through over the center of the rectus, the former is carefully separated from the muscle, which is then displaced outward, and the incision is made through the middle of the posterior sheath and peritoneum. Mr. Robson never uses a needle holder.

VISIT TO MR. ROBERT JONES' CLINIC OF LIVERPOOL.

Mr. Jones is certainly master of his work in orthopedics, and he does a tremendous amount of work. He operates at his "Nursing Home" every morning at 8:30 o'clock, then he goes to his office at 11 o'clock and sees from thirty to fifty patients, keeping him busy until about 3 o'clock in the afternoon. Four afternoons a week he operates at some public

hospital. He is surgeon-in-chief at four of these institutions, including a beautiful new hospital eleven miles from Liverpool and situated upon the bank of the Dee river. It is a hospital for children and has 225 beds.

Mr. Jones' office work is very interesting indeed. His offices are located in a large building, and consist of two large waiting rooms, one for the better class of patients and the other for the poorer class. There are ten consulting rooms, one private office, one *x*-ray room, and a small operating room. His *x*-ray photographs are filed away in one room, where over 7,000 radiographs are stored. Near this room is a large splint room. He has also fitted up a regular blacksmith shop, where one man is kept busy making various splints, braces, etc.

He took me with him to see all of his patients. To see him make examinations, advise treatment, etc., was indeed very interesting. His work consists in combining surgical treatment with practical mechanical appliances. The following will give an idea of what he does on a very busy day: Wednesday, when he goes to the Southern Hospital, is usually his busy day, and last week was as follows: He performed four operations at the "Nursing Home;" a loose semilunar cartilage, spastic paraplegia, infantile paralysis of one leg and a bad clubfoot. Then he went to his office where he saw fifty patients. From there he went to the Southern Hospital and performed sixteen operations between the hours of 3 and 7:30 p. m. These cases comprised three cases of loose semilunar cartilages, three cases of infantile paralysis, one osteotomy of femur, one osteomyelitis of tibia, three clubfeet, one torticollis, one case of fracture of tibia and fibula with faulty union, one fracture of elbow and one spastic paraplegia. He does all his surgical operations very well indeed, and the asepsis is excellent.

Every other Sunday Mr. Jones holds a free clinic at his office for the poor, and it is quite a sight. Four or five extra physicians come in on those days to help him. The number of patients varies from 150 to 300.

I think I am safe in saying that I saw 500 orthopedic cases during the week in Liverpool. The details of the various more important operations will be described in the following paragraphs:

In *torticollis* an incision is made directly over the inner third of the clavicle and the tendon of the sternocleido-mastoid muscle is simply divided at its attachment to the sternum and clavicle. He has employed this method for several years, for he found that the results are better than when he lengthened the muscle.

Clubfeet.—In infants in whom the condition is not very bad he corrects the position by manual manipulations, and then applies a tin posterior conclave splint with the foot-piece flexed to a little less than a right angle and everted. The splint is held in position by adhesive strips and a bandage. I saw many of these applied and also many reapplied. They hold the foot in splendid position. In the more pronounced cases he makes a subcutaneous tenotomy of the tendo-Achillis and then applies the splint as above described. In still more pronounced cases he divides the tendo-Achillis and plantar fascia, then applies the same splint as above. In cases of long standing he uses the Thomas wrench for mould-

ing the foot into position. Some of these feet he puts into plaster-of Paris casts, while to some he simply applies the tin splint. In a few of the older cases with marked bony deformity of the foot, he removes a wedge-shaped piece of bone from the outer side of the foot, and also divides the tendo-Achillis and plantar fascia. I saw many of these club-feet in all stages of the treatment, and his results are excellent.

Flatfoot.—In ordinary static flatfoot the sole is built up along the inner side of the shoe and on the inner side of the heel, which is also brought one inch farther forward on its inner side than normal. This makes the patient walk on the outer side of the foot. These patients are also taught to walk pigeon-toed. While under treatment these patients are never allowed to walk without the above-described shoes, not even about the bedroom. Any walking that might become necessary without the shoes must be done on tip toes. In all of these cases an adhesive band is placed about the arch of the foot. Some member of the family is taught how to properly massage the anterior group of muscles over the inner surface of the leg, which is to be carried out daily.

In rigid flatfeet with spasm of the perinei, Mr. Jones excises at least one inch of the perinei tendons. He never just divides them, for by so doing he has found that they grow together again in a short time and cause recurrence. After the excision of the tendons he carries out the same treatment as given above. In some very bad cases he makes forcible overcorrection, then applies a plaster-of-Paris cast for six weeks, after which time he treats them as ordinary cases of flatfoot.

Rheumatoid Arthritis.—Mr. Jones has a great many of these cases, especially of knee and hip. He takes an *x*-ray picture in each case in order to determine the amount of deposit in the joint. In early cases the treatment consists in limiting the motion of the joint to the range, which is painless. This is accomplished by applying a hinged brace in such a manner as to limit flexion and extension to a point a little short of that which is painful. Ordinarily this joint is fixed at about 15 degrees of full extension and allowing about 60 degrees of flexion, thus giving the patient movement of the joint without pain. The results are good, even a practically perfect joint often being obtained in this way. In bad cases ankylosis is regarded as a good result. In case of involvement of the wrist joint immobilization in the extended position is the treatment employed. In any condition of the wrist, such as sepsis, tuberculosis, etc., in which there is danger of ankylosis taking place, it is always dressed in the extended position. The power to grasp objects with the fingers and hand is greatly impaired when the wrist is in the flexed position.

Operation for the production of pseudoarthrosis without disarticulation of the head of the femur. An incision six inches long is made so that the upper border of the great trochanter is at its middle point. Another incision is made across the base of the great trochanter, which is sawed off with the muscles attached. Then the capsule of the joint is opened and the neck of the femur is divided. The free piece of the trochanter with its muscles attached is now fastened to the head of the

femur which remained in the acetabulum. This prevents ankylosis from taking place again. The condition of shock is also avoided, which so often accompanies the removal of the head of the femur from the acetabulum.

Pott's Disease.—Mr. Jones rarely even employs a plaster-of-Paris body cast. Children suffering from this condition are placed on their backs in a position of hyperextension. For this purpose a modified Thomas double hip splint is used. These little patients can be kept clean, can be handled easily and seem to be very comfortable. They do very well indeed. Bad cases are kept in these frames for two years. In others, after a few months, a brace is applied to the back, so arranged that it keeps the back in a hyperextended position and does not interfere in any way with the full expansion of the chest. It is the first apparatus I have ever seen which seems to maintain the correct position just as it should be. This brace is worn night and day and is never removed under any condition except with patient lying flat on a table, the face being downward. The results of this treatment are apparently excellent.

Tuberculosis of the Hip.—In incipient cases a Thomas splint is applied. Advanced cases are placed in bed on a modified Thomas double splint, with the affected hip abducted. In old cases of tuberculosis of the hip with ankylosis and marked shortening, an osteotomy is made at the level of the great trochanter. The leg is placed in a marked degree of abduction until union has taken place. Then when the leg is adducted to a straight position it tilts the pelvis downward on the short side and thus overcomes a great deal of the shortening.

Loose Semilunar Cartilages.—Mr. Jones operates on many of these cases every week. He performs a splendid operation with excellent asepsis. The patient is placed upon a table so that the foot and leg hang over the end, the knee being flexed at a right angle. The incision is made beginning at the level of the lower end of the patella and extending downward and backward. It is therefore lower down than usual. This gives excellent access to the joint, one being able to inspect it and remove the loose cartilage without manipulating the joint at all. There are two decided advantages in this position: first, it gives best access to the joint, and second, no air is pumped in and out of the joint, as is done when the knee is manipulated during the operation. For a period of over ten years the operator has not had the slightest infection or other trouble with any of these cases following the operation. While Mr. Jones is a very careful operator and very thorough as to asepsis, yet he is very rapid.

Fractured Elbows.—These are placed in flexion with no cast or splints. He puts a band around the wrist and another around the neck of the patient. These two bands are then fastened together. The rule as to when the arm has been up long enough is as follows: At the end of the third or fourth week the band about the neck is loosened, letting the arm down to 15 or 20 degrees. If at the end of the second day the patient cannot voluntarily flex the arm to the former position, it is again flexed acutely for another week or two, at the end of which time the same test

is made again. All splints used for putting up fractures are made of concave strips of tin, four or five inches wide. Boiler felting one-half an inch thick is glued into the concavity of each splint.

Extension is applied in all cases of fractures of the femur and leg, also to bow-legs and knock-knees after osteotomy. In these cases a splint is used consisting of two iron rods which meet at one end about six inches below the foot. A leather-covered iron ring is fastened to the upper ends of the rods. The ring surrounds the thigh and fits against the perineum. The splint is applied and extension is made by fastening the straps applied to the leg to the lower cross-bar. The bones are kept in line by the application of tin splints. Patients wearing this apparatus move about and seem to be very comfortable.

Bunions.—The head of the metatarsal is excised. In two cases in which Mayo's operation was performed, a bursa developed when the pad was placed over the ends of the resected bone.

Colles' Fracture.—The fracture is reduced and placed in a position of pronation, with the wrist slightly flexed. It is held in position by two of the tin splints which are twisted so as to fit the degree of pronation. I saw the splints removed from some of these cases and the results were excellent.

Mr. Jones treats a great many cases of spastic paralysis and infantile paralysis. He has now operated on over 300 spastic cases and more than twice that number of simple infantile paralysis. In the spastic cases he expects to enable them to walk with comparatively little difficulty or deformity. They generally walk with the aid of a cane, but some get about unaided. The idiot, the microcephalic and the violent types of diplegic who are subject to fits and who have generally lost control of the sphincters, are not amenable to treatment.

These cases are managed by applying splints, making prolonged fixation of the spastic muscles in a position opposed to their contraction. Where fixation is not sufficient, he does not hesitate to perform tenotomies with excisions of portions of the tendons and tendon transplantation. In these spastic cases a simple division of the tendo-Achillis is never made, for the spastic muscle will cause the tendon to retract high up and cause the patient to walk upon his heel. The tendon is divided and the ends allowed to separate about an inch. The ends are held in this position by strands of a catgut suture, and union takes place rapidly. Mr. Jones never attempts to lengthen the tendon by splitting, sliding along and then suturing. In most of the spastic cases an excision of an inch or more of the tendons of the adductor muscles of the thigh is made. After simple division the muscles reunite without any lengthening, thus giving rise to same troubles again.

The after-treatment is very important. The child must be taught the various movements, and the principles which should govern the exercises are: 1. The movements should be practiced slowly and without excitement. 2. They should be made interesting to the child. 3. Those movements opposed to the direction of the deformity should predomi-

nate. 4. Those presenting the greatest difficulty should be chiefly practiced. 5. They should be taught to walk with the legs abducted.

Infantile Paralysis.—The principle of the treatment here consists in placing the affected muscles in a relaxed condition, and keeping them so absolutely. When a group of muscles is being kept in a relaxed condition, Mr. Jones thinks it is very harmful to let them down even for a few moments at a time. In case of paralysis of the brachialis anticus and biceps, the arm is placed in acute flexion, and in order to keep it so continuously a large diamond-shaped flap of skin is excised from the anterior surface of the arm and forearm with the elbow at its center. The edges are then sutured so as to bring the upper and lower angles together, thus holding the arm in acute flexion.

In case of drop wrist the forearm and hand are put on an anterior splint with the hand portion bent at such an angle as to hold the wrist in marked extension. The test employed to tell whether the drop wrist is amenable to treatment is to ask the patient to try to move the fingers in the direction of extension. If the patient says he cannot, the surgeon takes the wrist and forcibly flexes it still farther. The patient is asked to extend the fingers with the wrist in the new position. If he succeeds ever so little the prognosis is good. Should he fail, treatment will probably be of no avail.

The early treatment of any group of muscles consists in attempting to prevent or correct structural shortening of muscular groups. This usually means hyperextension of the wrist, flexion of the elbow, extension of knee and rectangular fixation of the ankle.

In cases where just certain muscles are positively paralyzed, Mr. Jones frequently grafts a healthy tendon into a paralyzed one or into the periosteum. Cases in which the knee or ankle joints or both are hopeless flail joints, an arthrodesis is performed, transforming the flail-like worthless joint into a fairly useful one. In most of the so-called paralysis of the lower extremity, the psoas and iliacus muscles are usually unaffected. Dependence for walking is placed upon these muscles after the knee and ankle have been ankylosed. The knee joint is ankylosed by removing the cartilages and articular surfaces of the bone. In the case of the ankle joint, the cartilage is removed from the astragaloid surface of the tibia and malleoli. Then a wedge-shaped piece of bone is removed from the astragalus. This wedge is of such size and shape that when the astragalus rests perfectly against the articular surface of the tibia the foot will be at a little less than a right angle. A wedge of bone is also removed from the midtarsal joint. The foot is fixed in the corrected position for several weeks. The wedge is never taken from the tibia, as it might interfere with the tibial epiphysis and the later growth of the shaft. This operation is never performed before the patient is 8 years of age, for before that time one cannot be sure of bony ankylosis. It is also never done until all means of restoring the paralyzed muscle have been tried. Mr. Jones has frequently found that muscles which had been useless for over two years were not hopelessly paralyzed, but were

overstretched muscles, and that by putting them in a state of relaxation they would recover.

In the ankle cases, while waiting to see if the muscles will recover, entire dependence is not placed on the mechanical appliances, for the patients are seen to let the foot drop while changing the brace. The foot is kept flexed by the excision of an oval skin flap from the convex surface of the foot. By suturing the edges, the skin is shortened and put on the stretch, thus holding the foot up. In these cases the tendon of the extensor proprius hallucis is also transplanted into the periosteum of the first metatarsal bone. Mr. Jones has performed the operation of arthrodesis in over 600 cases.

On the whole, I think Mr. Jones' work is quite wonderful. Last week he went to Edinburgh to receive the "Lister Prize" which was awarded him. It is a prize given by the University of Edinburgh to the man who has made the greatest advance in surgery during the past three years.

I was over at Cardiff again for three days after leaving Liverpool. I saw some interesting cases, the principle ones being a goiter, a psoas abscess, a prostatectomy, and a dislocation of the hip joint with fracture of the neck of the femur. In the *goiter case* I was impressed with the small amount of blood lost, also by the extreme care taken to control every particle of hemorrhage after the gland was removed and before closing the wound. This feature of the technic Mr. Thomas learned from Kocher, who lays great stress upon the importance of controlling every bit of hemorrhage at the close of a thyroidectomy in cases of exophthalmic goiter. He says that squeezing the gland has nothing to do with the production of hyperthyroidism, the symptoms of which after operation are due to the absorption of blood from the incomplete control of hemorrhage.

Kocher has carried out many experiments in regard to transplantation of the thyroid, and has found that the only place in which it will remain permanently is in the head of the tibia just below the epiphysis. He has found that placing it in the neck, in the peritoneal cavity, in the muscles, and in various other parts of the body, the transplanted gland disappears in a few months. While in Cardiff I saw another transplantation of thyroid tissue into the tibia of a cretin.

Psoas Abscess.—An incision was made just internal to the anterior superior spine of the ilium and the abscess opened at this point. A pair of long dressing forceps was then inserted, passed downward beneath Poupart's ligament and into thigh to the bottom of the abscess. An incision was then made over the end of the forceps, opening the abscess at its lowest point. Then with pieces of gauze held by strong forceps, the abscess cavity was thoroughly cleaned out. Many large masses of fibrin-like material, together with a great deal of pus, were removed. The entire abscess cavity was packed with gauze, several yards being necessary to fill it completely. Both incisions were then closed. Two days later the upper wound was opened under anesthesia; the gauze was removed and the opening closed again. These wounds heal by primary

intention and there is no further collection of pus. Occasionally in cases in which the pus is thin and watery, the abscess refills and has to be aspirated two or three times. Mr. Thomas says the results are very good, for in twelve years he has had only one case recur. The spine is immobilized after the operation.

Prostatectomy.—Mr. Thomas performs the combined suprapubic and perineal operation. The bladder is opened above and the prostate is lifted from its bed, a pair of long forceps is passed through the bladder, behind the prostate and down against the perineum. An incision is now made over the point of the forceps, and then with one finger through the perineum and one above, the enucleation of the gland is completed. All drainage is established through the lower incision, the upper one being closed completely. The operation is done quickly, the perineal portion not prolonging the procedure more than a minute or two.

VISIT TO MR. MOYNIHAN'S CLINIC IN LEEDS.

Most of the work which I saw at Mr. Moynihan's clinic was abdominal, mostly in the upper abdomen. I saw only two operations outside of the abdomen. One a case of loose semilunar cartilage and the other a goiter.

Loose Semilunar Cartilage.—The patient was placed in the Robert Jones' position, with the foot and leg hanging over the end of the table. The patients are advised to use the knee as soon as possible.

Goiter.—All hemorrhage was controlled very carefully, every bit of oozing being checked at the close of the operation. A glass drainage tube was inserted, but no gauze was used. Having the wound perfectly dry at the close of the operation is regarded as the most important step in preventing hyperthyroidism.

The abdominal operations consisted of the following: *Gall-stones:* I saw several of these cases. Strange to say, nearly every case was complicated and required cholecystectomy. The indications for removing the gall-bladder were when the cystic duct has been injured so that it cannot remain patent; when the gall-bladder walls are so thin that the gall-bladder will not be able to act as a contractile organ.

A point in diagnosis was made, namely, that a patient having frequent attacks of pain, once a week or once in two weeks, accompanied by rigor or temperature of 101, irrespective of jaundice, means a stone in the common duct in 90 per cent. of the cases. These symptoms with jaundice mean a common duct stone every time.

Cholecystectomy.—Two pairs of forceps are applied to the cystic duct at the neck of the gall-bladder and are used as retractors. A cuff of peritoneum is then made on the cystic duct and pushed downward. The duct is now divided and both cut ends are cauterized. The gall-bladder is peeled off from the liver. The proximal ends of the cystic duct and cystic artery are caught separately. Both are ligated, but the ligature on the cystic duct is left long. With a fine catgut stitch the cuff of peritoneum is sutured over the end of the duct. A needle is placed upon the ligature, which was left on the duct, and with it a rubber tube, the

lower end of which is split up one and one-half inches, is fastened around the end of the duct. No other drainage is inserted. Four cases out of five never drain bile. The mortality is less than 1 per cent. By this method Mr. Moynihan claims that no adhesions are formed about the pylorus to give rise to gastric disturbances later.

Duodenal Ulcer.—Mr. Moynihan always feels sure of a diagnosis of duodenal ulcer, but never feels sure of the diagnosis in cases of gastric ulcer. In cases of duodenal ulcer, when the pain always comes late, say four hours after eating, it means that the duodenum is pouched backward toward the kidney and the ulcer is on the posterior surface of this dilated portion. The duodenal ulcer is excised when it can be conveniently done without interfering with the lumen of the duodenum. In other cases a posterior gastroenterostomy with a very short loop is performed. The Connell stitch is never employed, for hemorrhage is said to have resulted from its use.

Gastric Ulcer.—Mr. Moynihan has had several cases of appendicitis in which vomiting of blood occurred. He says that patients who have pain in the epigastrium at irregular intervals, one-half to four hours after eating, also occasional attacks of hematemesis and who have relief from pain after vomiting, are usually suffering from appendicitis and not from gastric ulcer, as is usually diagnosed. The ulcer on the lesser curvature of the stomach is always excised, but the excision is not so wide as was formerly made. A circular incision just at the edge of the ulcer is made. It was observed that perforated gastric ulcers rarely gave rise to trouble after the perforation had been sutured, and from this fact the idea of a small excision of the ulcer arose.

Mr. Moynihan is very particular as to asepsis. He always protects the mouth and always wears gloves. Mr. Freyer is the only surgeon in England whom I have seen who does not protect the mouth and hair and wear gloves. In a series of experiments Mr. Moynihan found that microbes were present in every wound a half an hour after the operation. In every instance the bacteria were the same as those obtained by making cultures from the skin in the operating field. However, in these cases a very small percentage of infections resulted. When the edges of the wound were protected from the surrounding skin, the cultures were found to be sterile. Since protecting the edges of the wound as a routine measure, there has not been the slightest infection in several hundred cases. All English surgeons whom I have seen protect the wound from the surrounding skin as soon as the skin incision is made. They fasten gauze pads to the edges of skin by some special forceps.

COUNTY AND DISTRICT SOCIETIES.

CLAY COUNTY.

The Clay County Medical Society met in regular quarterly session at Flora, in the reception room of the Carnegie Library, at 1:30 p. m., Dec. 14, 1909. The following were present: Drs. B. F. Steely, E. P. Gibson, A. M. Sparling, A. J. Shore, N. W. Bowman, J. M. Boyles, E. C. Park, Jr., J. B. Hazel, Sr., J. B. Hazel, Jr., J. W. Walton and J. L. Wiggins of East St. Louis. Dr. Wiggins read a paper entitled "The Evolution of Diagnosis in Surgical Cases," which was instructive and highly enjoyed. The paper was discussed at length by those present. A vote of thanks was extended Dr. Wiggins for his valuable paper and a cordial invitation to visit the Clay County Medical Society again. On motion the society adjourned to meet at the next regular time.

J. W. Walton, M.D., Secretary-Treasurer.

CLINTON COUNTY.

A regular meeting of the Clinton County Medical Society was held in the rooms of the City Hall at Aviston, Nov. 9, 1909, and the following members were present: Drs. Meirink, Vernon, Cotter, Moroney, Drake, Wilcox, Reinhardt, Roane, Alsop, Bechtold, Vogt and Klutho. The secretary read a communication from Frederick R. Green regarding the action of the House of Delegates with respect to open meetings of county, district and other local medical societies, also notice of the resignation of Dr. Charles A. L. Reed as a member of the committee on medical legislation, with his message to the Auxiliary Legislative Committee and through that committee to the medical profession. The message was read before the society. The subject of open meetings was discussed by quite a number of members but no definite plans were arrived at nor any action taken. We all recognize this to be a big and very important subject to the laity as well as to the medical man, but it will take time for its development. The attitude of H. J. C. Beckemeyer, our legislative representative, in voting for the Osteopathic Bill, was denounced by the society, although all possible influence had been brought to bear to have him vote against it. Dr. Alsop made a motion, which was seconded and carried, that H. J. C. Beckemeyer be remembered and that a letter which proves his vote be put on file for future reference. The secretary then read a communication from the state secretary, Dr. E. W. Weis, enclosing a list of lecturers who have consented to read papers and deliver essays to the various local societies in the state. It was agreed to avail ourselves of the opportunity and try to have a lecturer at our May meeting. Dr. Klutho read a paper on "Why I Don't Use Ergot." Owing to lack of time, the discussion was deferred. The question then arose, what should a member of this society do if a mental healer is called in a case he is treating, to, as they call it, help along? Motion by Dr. Moroney, seconded by Dr. Bechtold and carried, that the doctor, if he is aware of the fact, have the patient make a choice between him and the mental healer and discontinue treating such patient or patients at once, if his request is not immediately complied with.

Motion made and seconded that the secretary be instructed to send a copy of the amendments to the Fee Bill, made in a previous meeting, to all the members. Dr. Vernon suggested a vote of thanks to the doctors of Aviston for their splendid entertainment of the society, which was responded to by every member present. It was decided to hold the next meeting, which takes place on the second Tuesday in February, at Breese.

Dr. B. J. Meirink, President,
Dr. John C. Klutho, Secretary.

WHY I DON'T USE ERGOT.

JOHN C. KLUTHO, M.D., BREESE, ILL.

During our last meeting a little discussion pertaining to the use and abuse of ergot proved so interesting, and the difference of opinion regarding its virtues were so varied that I have taken the time to look up authorities and also to get some information from some of our good men, and in this paper will endeavor to bring the results before you. As you will all remember, I made a startling statement that I have not used ergot for a good many years, am not using it now, and do not intend to use it hereafter; it was like exploding a bomb in the Russian Duma, everybody wanted to get to me at once. I like an argument and am always willing to meet it with what little stock of knowledge I have in trade. Our medical societies, I believe, are in existence chiefly for the purpose of coming together and exchanging ideas, giving the different methods we employ upon different occasions and telling of our success and failures as pertaining to medical science. It isn't said, then, if one uses a different method or medicine from the others that he thereby assumes superior knowledge over his professional brother; nor does he thereby try to dictate to him in that particular line. He simply states his views and if he has good proof for his assertions he is at least entitled to the privilege of stating them. If, on the other hand, we all held the same opinion in the same cases, did all of our work in the same way; in other words, if medicine was an exact science, our medical meetings would indeed be dull and uninteresting. During our last discussion on this subject I have taken mental notes and in this paper will try to answer you all to the best of my ability. I have written this paper partially for the continuation of the discussion and perhaps a little more so in self-defense.

To begin with, I am going to try to show that ergot as it is used to-day sends more women to an early grave than it saves. Another startling statement, but let us see what we can find. The history of ergot is rather old and remote. According to Playfair it has been known and used by Chinese physicians for many centuries. The earliest known direct allusion to the action of ergot on the uterus was made by Lonicer in 1582, and later on by Camerarius and Desgranges, who record that women in certain parts of Germany were employing spurred grain to accelerate labor. In America it appears somewhat doubtful whether its first introduction was due to Hosack or Herns. At any rate, in 1813 Prescott of Massachusetts published a dissertation on the natural history and medical effects of secale cornutum or ergot. Perhaps only of special interest to the obstetrician is that substance in ergot which is supposed to exert a specific effect upon the uterine muscles, i. e., the ecbolic principle, and in order to ascertain that principle or principles I have diligently scanned the writings and publications of such men as Karer, Bannike, Kobert, Kurdinsky and a number of others. These are all men of the latter day tribe of great chemists and botanists, and their work, if any, must surely carry some weight; and I have found the results of their investigation of ergot even more varied than I had any idea of when I first started this discussion, and if men of known caliber and worth greatly disagree among themselves as to the chemistry and physiologic action of a certain drug, we who must make a living by practicing medicine and who must take the word of such men for granted are certainly groping in the dark when we are indiscriminately using a drug of which we know very little and of which those who ought to know can tell us less.

Banneke in a very exhaustive article attempts to give an exact picture of the present status of our knowledge concerning the chemistry and physiologic action of ergot and its numerous preparations. He divides the various constituents thus far isolated into three groups. To the first group belong the coloring substances—phosphoric acid, fats, cholesterin, lactic acid, mannit, mannon-funyin, etc. They all prove inert. The second group comprises isocholin, ergotic acid, ergotinic, lecalo-amido sulfonic acid, ergotine or ecbolin-ergotenin-picro soclerotin and clavin. These substances exhibit slight physiologic activity. In the third group he places those substances which are supposed to exert a pronounced action and either produce gangrene, convulsions or uterine contractions.

Now, gentlemen, comes a series of confusing and contradictory experiments which should make all ergot users sit up and take notice. Spacelic acid is a strong vasoconstrictor and easily produces gangrene. According to Kobert and Kurdinsky it causes tetanic contractions of the uterus. Spacelotoin prepared by Jackobi as a purer form than spacelic acid shows practically the same physiologic action. It was regarded by him as the ecbolic principle of ergot and in the form of a salt named spasmotin was used by Calm as a drug capable of strengthening regular labor pains; also for the purpose of bringing labor on at will. Later investigations have proved it so unreliable that its manufacturers were obliged to take it off the market. In 1875 Tanret isolated two alkaloids, in his opinion, representing the pure active principle of ergot, a crystalline alkaloid (ergotinin), and an amorphous alkaloid, which he thought to be a physical modification of the crystalline. Independently of Tanret and shortly afterward Kraft also isolated two such alkaloids. He named the amorphous alkaloid hydroergo-tinin. In his experiments both failed to show any specific action on the uterus. Both produced convulsions and both led to gangrene. In other words, these two alkaloids seemed responsible for those undesirable by-effects of ergot when used for therapeutic purposes. The claim of Kobert that his cornutin represents the active constituents of ergot has been positively disproved by Tanret. According to Keller, ergot contains but one base and Kobert's cornutin, Tanret's ergotinin and Draggendorf's picrosclerotin are simply different forms of the same body. Berger, Carr and Dale, according to Bennecke, also isolated that amorphous alkaloid to which they gave the name of ergotoxin. They found it inactive when given by mouth, producing gangrene when actually resorbed. Bannecke further says we have at present no positive knowledge concerning those constituent substances of ergot, which produce convulsions. He sums up the situation by saying that our knowledge concerning the modus operandi of this drug up to this day has remained extremely meager. He further states that at present the ergotinin and the ergotoxin are the only two substances left which are claimed to represent the active principle of ergot. But again, very careful investigation contradicts the justification for such a claim. Kobert, after persistent but unfruitful attempts to obtain this elusive principle, finally compromises by suggesting that possibly the ecbolic principle does not always exist in secale in a preformed state. Kraft, finding himself in the same boat, says it may be formed while the raw plant is subjected to the various chemic influences during the preparation of the tract, etc. But now come the boys, Berger and Dale, and go the others one better. Perhaps they say there is something in the blood which, when it comes in contact with ergot, forms a chemical combination and, presto, we have the ecbolic principle, as it were, produced in the human laboratory. Excellent! Beautiful! Fine! But I fear it is reaching out a little too far. To gain a point, after all of this, Bennecke again and very logically sums up our actual knowledge concerning the chemical constituents and action of the so-called principle of ergot as nil. Ergotoxin is an alkaloid already mentioned in the preceding pages which has been isolated by Berger and Carr in the Wellcome Physiologic Research Laboratory; it is the hydrate of Tanret's crystalline ergotinin, and in all probability the so-called active principles prepared by Kobert and Jackobi owe their activity to the presence in them of ergotoxin. Ergotoxin has been placed on the market by Burrows, Wellcome & Co. under the name of ernutine. They make the following claims for this new preparation: Ernutine in suitable doses produces the effect for which ergot is given. The dose can be regulated with a degree of accuracy which has been impossible in the past, when only extracts and similar preparations of the crude drug were available. Now let us see how far we've gone since 1875. Tanret isolated and introduced this same preparation ernutine under the name of ergotinin; Kraft showed that it was a bad citizen and it fell by the wayside a little later. Berger, Carr and Dale, according to Bennecke, also isolated this amorphous alkaloid and called it ergotoxin. They found it inactive when given by mouth, producing gangrene when actually resorbed. Now, why, under the name of ernutine, it should do all the manufacturers claim for it, when thirty-four years ago its actions were proved to be exactly the opposite, is something I cannot very well

comprehend. Careful clinical tests with ernutine have not yet been reported. Bennecke experimented on animals and obtained results which are somewhat at variance with those of Dale. He suggests that larger doses will have to be given. He does not agree with Dale that ergotoxin represents the only active principle of ergot, because Dale himself states that ergotoxin, even in large doses, if given by mouth, fails to show any effect on the uterus. How large the dose must or should be it seems nobody knows, except perhaps the manufacturer, and where he got that valuable information is a mystery. Now, as we dig down deeper into the mysteries of this, our cherished and beloved drug, we find that there isn't even a known reliable method by which ergot can be standardized. One of the oldest methods is the production of gangrene in a cock's comb, but this tells little more than whether or not a certain specimen is active. The rise of blood pressure following the intravenous injection of a standard dose is also suggested as an indication of activity. Such a method is, however, neither accurate nor complete. Berger and Carr claim that preparations containing ergotoxin can be accurately assayed by physiologic means for their ergotoxic contents. This is rendered possible by observation of the characteristic action of the alkaloid on the terminal motion elements of the sympathetic nervous system. What those characteristic actions are they do not state, and how they would standardize a certain specimen of ergot to any degree of accuracy in that way is beyond my ken. Kurdinoscosky and Kahrer both devised a method by which they expected to standardize ergot. They completely extirpated pregnant and non-pregnant uteri of animals and kept them physiologically alive by sending a constant stream of Renger's fluid through the several blood vessels, and to this fluid they added the different preparations of ergot. Their results have been so different that it is not worth while to consider them. Edmunds and Roth tested eleven specimens of the fluid extract of ergot and found great variation in their physiologic efficiency, some of them being very weak and others positively inactive. Wood and Hofer extensively experimented with fluid extract of ergot obtained from representative manufacturers and from the shelves of reputable druggists. Only two out of eleven samples were found to be active. They further state that not only is the extract of ergot so unreliable, but also very unstable, and if one were lucky enough to procure an active specimen, its deterioration may take place at any time. So much for what our men who ought to know have to say about ergot.

Now for the continuation of the discussion. Dr. Bauer says he uses ergot only in suspected cases of post-partum hemorrhage and retained placenta. Now let us see, our authorities tell us that lowered vitality, broken down constitutions, tedious labors, forceps delivery, etc., predispose to post-partum hemorrhage, but will not any practitioner who has had some experience in this line, tell you that very often it occurs when least expected? Then we know of a degenerative process of the muscle fibers of the uterus, and also of a number of accidental and mechanical causes which may produce post-partum hemorrhage and which cannot possibly be diagnosed or suspected beforehand. If, then, ergot is the thing to prevent post-partum hemorrhage, why not give it as a routine in every case and make sure to prevent that sort of thing. The doctor also tells us that in his twelve years of practice he has had fifteen cases of post-partum hemorrhage, a pretty large number, showing at least that his giving of ergot did not materially cut down the average per cent. He did not mention the outcome of those cases. But I take it for granted that the doctor did not fold his hands and sit quietly at the bedside and wait for the ergot to work out his salvation, but, on the other hand, immediately got busy with a clean rag or a sponge of cotton saturated with vinegar, perchlorid of iron or a peeled lemon grasped in his hand and carry it up into the womb, squeeze out the contents and with the other hand manipulate the body of the uterus from above, and thereby promptly and successfully get exactly what his ergot in the first place failed to do. So what was the use in giving ergot at all? The doctor says it may be easy to procure contractions without ergot while you are present, but what will keep the uterus from dilating after you are gone? But, gentlemen, if the ergot failed to produce the desired contraction and its resulting hemorrhage in the first place, what assurance would you

have that it would do so in the second? If you see to it that your patient is perfectly clean as far as the uterine cavity is concerned and have the desired contraction, just instruct her before you leave to place her hand over the fundus of her womb and when she feels it rising and getting soft, gently manipulate the organ with either one or both hands, and you will find the results will be far more prompt and gratifying than all the ergot in your satchel can produce.

The diagnostic point in cases of retained placenta that is to foretell its occurrence is just as elusive as in post-partum hemorrhage. If, then, in a given case where the placenta fails to be delivered in due time, we say you give a dose of ergot and then wait fifteen or twenty minutes more for its action, which at best occurs only once in six times. Nature has arranged this child-birth business very ingeniously. She starts the contractions on the top, that is, in the fundus, and gradually works down toward the opening, at the same time dilating the os. All those things to facilitate the evacuation of the viscus, when time for such evacuation is ripe. But ergot, should you be fortunate enough to have at hand an active specimen, is also a very unscrupulous and indiscriminating drug. It contracts uterine fibers wherever it chances to find them, and as the os is thicker and contains more fibers than any other part of the uterus, it stands to reason that it will do a little more contracting there than it will in those parts with less fibers. The result is you bottle up your placenta, make matters worse, and 99 times out of 100 you have to go after it with your finger or hand and peel it out after all, so again, what was the use in giving ergot? I told you a little while ago that I have not used ergot for some years, but I did use it during the early part of my practice, and the results I got are perhaps responsible for the prejudice I now hold against it.

The first occasion was in a case of hemorrhage from the lungs. I was called to see the patient some time in the afternoon. As the reputation of ergot for stopping any and all kinds of hemorrhage was pretty well pounded into my cranium during my school-days, I had no doubt as to the outcome. I immediately started giving ergot per os and in a little while switched off to ergotine hypodermically. Well, gentlemen, to make a long story short, I injected enough ergot into that man's system to contract all the garden hose you can find in this town, but the hemorrhage continued with unabated severity. As things kept on getting worse, I finally put on my thinking cap and remembered having seen something about tying bands around proximal ends of arms and legs and packing chest in ice, and after my patient was about depleted and unconscious the hemorrhoge finally stopped.

The next occasion, like the preceding, also occurred in the early part of my practice, only it is more of a test because it happened in a real case of labor. I delivered the woman, or rather she delivered herself, without much trouble, and I did the cord-tying stunt and went home. The woman had a slight continual hemorrhage, which, after about six hours, became rather profuse, and I was called to see what I could do for it. Of course, I knew ergot to be good for hemorrhage and I immediately proceeded to administer it. It was one active out of the eleven I was telling you about and it worked like a charm; bleeding all stopped and everybody was happy. What did I care for a little thing like a uterine hemorrhage as long as the rye got smutty and our manufacturers knew how to make it into a decoction? I saw the woman every day. The womb reached up to the umbilicus and it was a great deal larger than I thought it really should be, but she was feeling well, had no hemorrhage, so what was the use to worry? About four or five days thereafter, at 8 p. m. (I'll never forget the time, it was about the middle of August and about as hot as it ever gets in this clime), when I got to the bedside I was sweating like a trooper and the woman was having a genuine septic chill. I did then what I should have done before I gave the ergot, namely, put my finger up there and found the womb greatly enlarged. I dilated the os without much difficulty until I could introduce three fingers, and after scraping out all I could with them I finally forced in my hand and got out five or six handfuls of clotted blood that looked like liver. This procedure brought on a great deal of fresh hemorrhage and that, together with the screaming and squirming woman, the extreme hot weather, the fainting of the husband who was holding the

lamp, mark this episode as not only one of the most exciting but also one of the bloodiest propositions I have ever been called on to take care of, and just think of it, all for a dose of ergot. I finally got her cleaned out, packed about five yards of gauze in the open uterus, and after a six weeks' siege in bed the women finally recovered. Perhaps a piece of membrane or placenta had remained in the womb and had been the cause of the hemorrhage. The ergot I gave was unfortunately active, tightly contracted the mouth of the uterus, and as the blood slowly kept on oozing out it went in the direction of least resistance, namely, toward the fundus, filled up the cavity until by its own pressure it caused the hemorrhage to stop. The clotted blood finally became infected and hence all the trouble.

Now I know you will all admit or rather agree with me that I made a serious mistake in giving that ergot for that hemorrhage. Would it not have been better if I had looked for the cause, removed it in the first place, and if then it had been absolutely necessary for any one to take ergot to have drank it myself?

Dr. Carter tells us he used ergot all along until one day in St. Louis he heard some one read a paper which was derogatory to ergot. That same evening he had a labor case, omitted the ergot and was promptly called out during the following night for a hemorrhage. He went immediately to the bedside, administered the latent dose, went back home to bed and spent the rest of the night in peaceful and undisturbed slumber. The question in that case arises, was the omission of ergot the cause of rousing our dear doctor out of bed at midnight to attend said hemorrhage? I think not, taking into consideration that two bottles out of eleven are active, besides the probability of deterioration of those two bottles. The doctor must have been or rather is extremely fortunate in always getting the active product, or else, under the general run, only one woman out of his six would get the benefit of actual uterine contractions and the other five would have to be contented with a had taste in the mouth and a sick stomach. If that particular case the doctor was telling us about was suffering from a simple hemorrhage, due perhaps to a slightly relaxed uterus, a little manipulation of the fundus performed by the woman or a cold pack would have stopped that hemorrhage just as efficiently and, I dare say, in less time than ergot. If, on the other hand, the hemorrhage was due to retained membranes of placental tissue, ergot, of all drugs, was absolutely contraindicated. Dr. Bauer says that when he first came to Germantown he did not use ergot for about one year, then one day he was discovered. A midwife came to his office and said, "Doctor, I would like to get some ergot." After he told her that he did not have a drop of ergot in the shop, the woman threw up her hands in astonishment and said, "What, doctor! You practicing medicine without ergot!" Since then the doctor has been using ergot.

A short time ago a woman came to my office and said, "Doctor, that medicine you gave me last time I was here is bad stuff to take." "Well," I said, "madam, it may not be sugar-water, but it isn't the worst tasting medicine by any means." "Oh, no," she said, "I've taken worse; that black stuff they give you after childbirth is the worst medicine I ever took. My last babe was born twenty years ago, but I'll never forget that taste, not if I get to be a hundred years old."

Drs. Gordon, Gissy and Meirirk say that they use ergot indiscriminately just as regular as tying the cord. Well, their women will remember them a long time for it, for if that vile and nauseating taste still lingers after a lapse of twenty years, the surroundings closely connected with the occasion are certainly not so very soon forgotten. Dr. Bauer again tells us that every time he omits the ergot after child-birth, say ten or fifteen minutes after everything is over, the woman says, "Oh, doctor, I feel so bad." The ordeal through which a woman passes when she gives birth to a child is certainly a great one. We have a solution of the continuity of a gradually complete, if only a temporarily established circulation, a loss of about 8 or 10 pounds of bulk, a general shifting of the organs of the abdomen and, I might add, of the thoracic cavity, just such a condition that would bring on a certain amount of shock, a dizzy and faint feeling, etc., and especially so where the woman is a little below par. Drs. Gissy and Gordon immediately nodded their heads in assent with Dr. Bauer's assertion. Their women also say, "Oh, doctor, I feel so bad, if the ergot is omitted." Now, gentle-

men, there are two things I'll concede to ergot. One is, it sometimes contracts the womb, and the other is, it always makes the woman sick as the devil. Ergot has never been accused of being a stimulant nor a sedative and couldn't possibly have any influence on this bad feeling the doctors were telling us about, except perhaps to augment it. As they are in the habit of giving it, their vivid memory regarding said condition would rather indicate that it is brought about more in spite of ergot than for the lack of it. I would like to say a great deal more on this subject but this paper is already longer than I had at first intended.

In conclusion, however, I want to go on record, and with me are not only hundreds but thousands of other physicians, that ergot is one of our most unreliable, most mysterious, most vile and, last but not least, most dangerous drugs that is to-day recorded in our pharmacopeia. I say most unreliable because, according to pretty good authority, only one-sixth of the entire output is active, besides its being very unstable. I say most mysterious because nobody seems to know much about it; most vile because its nauseating taste and actions linger for twenty long years in the system and memory of those who have taken it; most dangerous because it has indirectly sent many a woman to an early grave. Why this drug should have cloven so tenaciously to the hearts of the practitioners all these long and many years without being discovered and placed in its true light, only adds to its mysteriousness. It somewhat reminds me of the old and decrepit family dog. While he was young he never did amount to much but was kept because every well regulated family had a dog, and when he got old and of no use at all, nobody wanted to nor had the heart to kill him because he had been with the family so long, and he is left to die a natural death. And so it is with ergot; nobody wants to kill it, it has been with us so long; but, like the dog, it is going to die a natural death, for there are thousands of physicians to-day who are not using it at all, and the number of adherents who are burning incense at its shrine are decreasing in number every day, and I venture to say that it won't be many years before it will be relegated to the class of has-beens, not only for the benefit of the physician but also as a great blessing to womankind.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, Oct. 20, 1909.

The society convened at 8:30 p. m. in the Northwestern University Building, with John A. Robison, president, in the chair. This was a clinical meeting, and Dr. Arthur Dean Bevan presented a case of sacrococcygeal tumor, appearing in a child at birth and operated on when two weeks old. Dr. Davis read the history of the case and described the microscopic findings, and also showed the gross specimen which presented four small cysts. A study of the tumor presented three points of interest: 1. Two nodules about the size of split peas. 2. Three areas that looked a good deal like healed ulcer of the stomach. 3. A white line that was discovered in the physical examination. The gross findings of this cyst correspond closely with tumors that have been called hygromas in 1843 by Wernher occurring anterior to the sacrum and which, according to him, are similar to those in the neck called cystic lymphangioma. In 1858 Lotzbeck showed six more cases. He had, in all, fourteen cases. Since then some more have been reported. Pathologists have described these as of purely endothelial origin and this was quite in accordance with the section here until we found a rest of epithelial tissue. This would throw out lymphangioma. The epithelial rest would speak more for its origin from the neural canal. A conclusion cannot be arrived at until the tissue has been stained for glia and ependyma cells. The case will be more thoroughly examined and reported later.

Dr. A. D. Bevan:—The section which Dr. Davis refers to is a cross-section of an irregularly epithelial lined tract or canal, and it is quite in keeping, as he suggests, with the development of this from the neural canal. Anyone going over the literature must be impressed with the enormous divergence of opinion as to

the origin of these tumors. I think, however, one can be perfectly safe in this general statement that sacrococcygeal tumors of this type bear out very well Cohnheim's theory and are due to the development of embryonal rests at the caudal end. Of course, this is not a very clear statement, but one that, I think, covers the ground pretty well.

My second case which I desire to report to-night is a case of carcinoma of the larynx operated on six years ago without any recurrence. The man speaks remarkably well and can be heard in any ordinary room, and he does this without any larynx and without any communication between the mouth cavity and the respiratory tract. I regret that he could not be here to-night. He talks by drawing in an enormous amount of air into the pharynx and into the cheek cavity. When he talks you will see the side of his neck and his cheeks swell out, and that is from the air he uses in speaking.

I shall present as my second case of the evening a very interesting case which is the second one we have had in our service within the last year, and I am inclined to believe it presents a new phase of ulcer of the stomach. About a year ago we had the first case of this type. It was a woman who gave a very clear history of previous stomach ulcer. When brought into the hospital she weighed about 80 pounds. Her normal weight had been about 125. She could swallow water and it would pass through the esophagus and through the stomach if not too large an amount was taken at once. She could swallow small quantities of milk, about an ounce, at a time. She could not swallow three ounces of milk and take a cracker. If she did there was shortly a regurgitation of apparently almost all the milk and the cracker. She was losing weight rapidly, and after going over the case carefully I came to the conclusion there might be a possibility of obstruction in the way of an hour-glass stomach. An *x*-ray picture taken immediately after the patient had swallowed a glass of water containing three ounces of bismuth showed the bismuth in the lower end of the esophagus and in a small pouch of the stomach. Another picture taken twenty minutes later showed the stomach divided into two pouches, the larger at the esophageal end. This very definite demonstration was confirmed three different times and we had no doubt we had an hour-glass stomach to deal with. Imagine my surprise at the operation to find there was no hour-glass stomach. There was a stomach sausage-shaped, rather narrow, rather contracted, but there was no evidence of constriction in that stomach at all. With the definite information we had from the *x*-ray, however, I had no hesitation in cutting into the larger pouch, when I found a constriction that would simply admit a small metal probe leading into the second pouch. The constriction had not extended to the peritoneum or the muscularis but was confined entirely to the mucous membrane and submucosa. In ordinary cases of hour-glass stomach and ulcer of the stomach generally the scar tissue extends into the musculature and through the peritoneal coat and is visible from the outside. The operation was practically that of a Heinecke-Miculicz pyloroplasty. The patient made a good recovery.

The second case was a young man brought to my attention by Dr. Sippy, whom we all know is very much interested in stomach work and does very admirable diagnostic work in this line. He found that this young man a year and a half before had an acute stomach ulcer, and he concluded he had pyloric obstruction from scar tissue. The man is well and under 30, and although there was little or no free hydrochloric acid in the stomach, the evidence was rather against carcinoma, and still the possibility had to be considered. Two weeks ago yesterday we operated on the case. We found a normal looking stomach; it was rather thick, it was contracted, there was no dilatation, the pylorus was perfectly normal, there was no evidence of scar tissue extending through the muscularis or peritoneum. However, with our previous experience in mind, and making an effort to invaginate the stomach into the pylorus with my finger, which is something I often attempt to do in these cases, very close to the duodenum I came across a band which prevented this procedure. We had very much the same condition to deal with as in the other case. We made an incision into the large pouch and found a constriction about an inch and a half from the pylorus which

would not admit the end of the little finger. It amounted essentially, as Dr. Sippy had found clinically, to a pyloric obstruction. We made here the same operative procedure as in the other case. Of course, it is very early after the operation, but the result is very satisfactory so far and the patient can take milk, cream, eggs, milk toast and semi-solid food without any evidence whatever of obstruction, so that we are very hopeful the patient will go on to a complete recovery. There is just one other item of clinical importance that I desire to call attention to. I have here an *x*-ray picture that shows a definite shadow at the point indicated. This was confirmed in three different pictures, showing the same shadow in the same position, the ordinary position of stone in the kidney. That shadow is the very unusual finding of a gall-stone in the common duct. This is only the fifth case out of more than a hundred in which a gall-stone has cast a definite shadow. I have here the stone which we removed this morning through the transduodenal route from the ampulla of Vater, and confirming definitely the *x*-ray picture. I should like very much if the surgeon would examine this. Findings of this kind are so rare that the value of *x*-ray in gall-stone surgery is very limited, but in this particular case the findings were of enormous value, because the man had a history of passing a gall-stone the size of a hen's egg from the rectum. Following that he had an abscess in the region of the gall-bladder which was drained. Following that dense adhesions formed about the pylorus, and following that the typical ball-valve picture of stone in the common duct described by Fenger. Yet it was a case in which the surgeon would hesitate to do a radical operation unless as found in this case we have definite evidence of the existence of stone. Ordinary cholesterin stones show no more shadow than normal salt solution or a piece of liver. These stones, however, that show are usually stones that contain a considerable amount of bilirubin calcium or calcium carbonate.

DISCUSSION OF DR. BEVAN'S CASES.

Dr. William Fuller:—I would like to ask Dr. Bevan why he removed the stone through the transduodenal route. I would also like to add that the oxid of zinc paste that he used in the case of a baby is a very excellent thing to use in making an artificial anus or in preventing excoriation of the body from discharges or secretions of any kind at any place.

Dr. Daniel N. Eisendrath:—Dr. Bevan's case of hour-glass stomach will certainly open the eyes of the surgeon to a new departure in gastric pathology. We are usually accustomed to see hour-glass stomach with the typical constriction with which we are familiar, being usually more marked at the greater than on the lesser curvature, and I am sure a considerable number of cases have been overlooked in which the external signs on the serosa were not in evidence. I am sure this case is of importance because of the absence of these external signs. The only question I would like to ask is whether the pyloroplasty as performed by him, *i. e.*, the Heinecke-Miculicz operation, is preferable to a gastroenterostomy with the proximal pouch. I should fear there might be secondarily cicatricial contraction if the same process was kept up which had originally given rise to the hour-glass stomach and a recurrence might ultimately result.

Dr. Otto Holinger:—I am sorry I could not see the case of Dr. Bevan, but the fact that a patient without a larynx can talk quite audibly is nothing so very remarkable, and I can remember at least two cases where, after complete removal of the larynx the patient could speak quite audibly to an audience of almost any number. A peculiarity of one case was that two folds of mucous membrane formed a transverse glottis so that the side muscles of the neck were able to stretch and relax it. In regard to the hour-glass stomach, if I remember right, Dr. Bevan said the bismuth remained for twenty minutes above the stomach.

Dr. Bevan:—The first picture was taken immediately, within a few seconds. Within twenty minutes it was in the stomach.

Dr. Holinger:—This seems to me of importance as to the etiology of such a condition. We have lately begun to get entirely different views as to diverticula of the esophagus, and it has been found that it is not such an extremely rare condition as it has been described. I saw an operation only two months ago for diverticulum, and in the same clinic, which has not a very large amount of

material, only four months before another case was operated on. Now, should it prove true that these bands of mucous membrane in the esophagus occur more or less frequently, then we would have in these bands in the stomach but a parallel to the bands in the esophagus.

Dr. Bevan:—This was the picture immediately, within half a minute; it was within the lower end of the esophagus that first presented. Within twenty minutes there was only a small amount in the lower end of the esophagus, and it was found in the two pouches of the stomach.

Dr. Holinger:—Of course, that would not be a diverticulum of the esophagus, but at least is another parallel to a stricture of this kind. So, if I may suggest as to the probability of the final outcome of the operation, I do not know whether I would not have looked for this stricture in this esophagus also.

Dr. Bevan:—That was carefully looked for. We thought at first it was a diverticulum of the esophagus.

Dr. Holinger:—The symptom of food lodging above the stomach is quite characteristic of diverticulum of the esophagus, and if we can look for parallels in this direction I think it would open up a possibility for an explanation of that whole condition.

Dr. Bevan (closing the discussion):—In reply to Dr. Fuller as to why the transduodenal route was selected, it was because no other route was possible. The stone was in the ampulla of Vater, which is within practically the intestinal canal itself, and the whole mass was so surrounded by adhesions that there was nothing else to do except to remove it by the transduodenal route. I think it would have been impossible to remove it except by cutting into the pancreas.

In regard to the question of Dr. Eisendrath as to making a gastroenterostomy, that was considered, but the stomach was so small that it was thought preferable to do the extensive division. I am quite satisfied if the conditions warranted that the proper method of handling these hour-glass stomachs is to cut out the constricted portion and make an end-to-end anastomosis because we have had recurrences by other methods. But many of these patients are mere remnants of humanity, so low in vitality that a very extensive operation is not really warranted.

DISCUSSION OF DR. FISCHKIN'S CASES OF XANTHELASMOIDEA AND LUPUS ERYTHEMATOSUS.

Dr. L. C. Pardee:—I wish to emphasize the extreme rarity of these cases of urticaria pigmentosa. We have had, I think, in the last ten years before the Dermatological Society two cases, and this is the first case I have personally seen of the yellow type. More frequently the cases are more pigmented. There is distinctly more of the urticaria in this case, but they are so extremely rare and we know so little about them that I am very grateful for the presentation.

The results in the treatment of lupus erythematosus have been excellent. I think the carbon dioxid snow will prove to be the best method. I have worked out two or three theories of treatment of my own, but they have not been successful. I have been successful in the acute discoid cases where there has been but one lesion in removing it with the *x*-ray, a mild treatment not going so far as to produce any reaction, but I agree with Dr. Fischkin that it must be used with great caution, and it frequently causes an aggravation of the trouble. With the snow I have had most excellent results and the lesions heal without scar at all.

Dr. Max Reichmann:—I had occasion the last few weeks to observe a case of lupus erythematosus with Dr. Schiller. The patient was referred to me for Roentgen ray treatment. The first time I gave him a very mild dose, one-half milliampere running through the tube for ten minutes, and, to my astonishment, three days afterward I found a very considerable exacerbation of the affection. I waited a week or so and gave him another treatment, with the same result. Finally I sent him back to Dr. Schiller for a different treatment. All authorities agree that this affection of the skin is not a good one for treatment by the Roentgen ray.

Dr. E. A. Fischkin (closing):—In answer to Dr. Pardee and the other gentlemen who have been so kind as to discuss the case, I would say that I have not employed tuberculin in this trouble, for the reason that the connection between lupus erythematosus and tuberculosis is very vague.

The best article on the subject is that of Jadassohn, in "Mracek's Handbuch der Hautkrankheiten," and from that you will see how discouraging the knowledge of lupus erythematosus is. Hundreds of observers have come to different conclusions, and even those who see a connection between lupus erythematosus and tuberculosis do not agree upon the nature of this connection. It is microscopically different from tuberculosis; we find no tubercles and tubercle bacilli, and clinically the connection of the two diseases has as yet not been proven. The histories of tuberculosis or of suspicion of tuberculosis in a large number of patients or their families offer but little conclusive evidence, when we remember that one-seventh of all persons have tuberculosis. In autopsies held in Vienna clinic on patients who had lupus erythematosus, tuberculosis was detected in no larger proportion than in patients who have died from other diseases. The injection of tuberculin in patients with lupus erythematosus has shown a general reaction only in those who were tubercular, the local reaction was more or less doubtful, and a real cure from tuberculin injection was seldom observed.

One experience is emphasized by most writers, and we saw it corroborated this evening, and that is, that the more recent the case the better will be the result of treatment, no matter what kind of treatment you employ, and that in old chronic cases you will have disappointments, no matter what treatment you use.

CASE OF TUMOR IN THE REGION OF THE HYPOPHYSIS.

Dr. Julius Grinker:—In view of the meeting which will be held next week on the subject of brain tumors I think it timely to demonstrate at least one case of brain tumor, which has only very recently become accessible to surgical interference.

The patient is a carpenter, aged 43 years, the father of two healthy children, of whom one died in infancy. He has no history of venereal disease; is a moderate drinker and smoker, never excessive in anything. He had not exposed himself to any kind of trauma. His family history is good, his father dying at 73 and his mother at 75. There is no similar case in the family. Thirteen years ago he had an attack of inflammation of the bowels; about eight years ago he had inflammatory rheumatism; last May he had tonsillitis and rheumatism and one tonsil was removed.

His present trouble dates back about one year. At that time he had dull headaches and dizziness. At about the same time he could not see well, there were mists and clouds in front of his eyes which prevented him from distinguishing persons. Improvement occurred rapidly, but later he became apathetic, generally indifferent to his former interests, and slept very much. He had headaches which were at times very severe but of short duration. At other times they were dull, more like neurasthenic headaches. Last April he again noticed that he could not see well, things were indistinct, and particularly did he notice that he could not see anything to the outside of either eye. He attended the eye clinics without receiving any benefit and finally became a patient of Dr. R. S. Pattillo of the Post-Graduate Medical School, who took ophthalmometric measurements and fundus findings and then referred him for further examination to Dr. A. A. Goldsmith, who also recognized the case as one of probable tumor of the hypophysis. Both of the gentlemen kindly referred the case to my department, for which I herewith express thanks.

I examined the patient June 4, 1909, and found normal viscera and reflexes, no evidence of enlargement of the hands, fingers, feet or toes, no enlargement of any of the bones, sternum, clavicles or vertebræ. It appeared to me, however, that the face seemed slightly enlarged, particularly at the cephalic pole. The inferior maxilla appeared somewhat enlarged, and the ears and nose were somewhat more voluminous than in the normal. Eyebrows were coarse and the region of the supraorbital arches were somewhat enlarged. The tongue did not show any

enlargement, the larynx was of normal size, the pulse was and still is rather slow (50-55). He came complaining of a dull headache and a tired feeling at times. He never had nausea nor vomiting and did not feel dizzy. On examining his eyes, however, I discovered a typical bitemporal hemiopia, as will readily be seen by the usual tests, which I am now demonstrating. I notice that the right eye has become much worse since I last examined him, a few weeks ago. He then showed a typical bitemporal hemianopsia. The blindness in the outer field of vision of each eye was unmistakable. The diagnosis was pressure on the optic chiasm, particularly of the central portion of it, cutting off the nasal temporal field of vision. In other words, tumor of the hypophysis region.

To make the diagnosis more certain, I referred the patient to Dr. Max Reichmann's laboratory, to have an *x*-ray photograph taken. Two pictures were made that show most beautifully the enlargement of the region of the sella turcica. I have marked them with a little black star, and Dr. Reichmann has kindly consented to show the negatives.

Dr. Reichmann demonstrated to the members the *x*-ray plates, which showed decided enlargement of the sella turcica.

A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY OF THE PSEUDOHYPERTROPHIC MUSCULAR ATROPHY TYPE.

The case I am presenting is not very uncommon, but rarely is a case shown thus early, and therefore I believe it of interest. He is 5 years old and was born in normal labor, preceded by a miscarriage and also followed by one. A sister, younger than himself, showed nothing abnormal. The boy began to walk when one year old. The mother noticed, however, that he was more clumsy than the other children; and a little later she noticed a weakness of his legs which has grown worse, so that at this time, while he can still walk fairly well, his gait is not quite normal, as can be seen by those who sit near. This boy does not have much muscle, but enough to get along with, and in examining him you will find the muscles of his scapulæ are rather flabby and so are the muscles on the hip. While he is still able to walk on a level surface, he cannot walk up a flight of stairs. As soon as the glutei and the back muscles are called into action he fails completely. You will notice that when on the floor, full length, he gets up in a way typical of patients afflicted with progressive muscular atrophy; in other words, he "crawls" up on his thighs. You will also notice that the calf muscles are very much hypertrophied. In my opinion, this is a case of the pseudohypertrophic type of muscular dystrophy. With my fingers hooked into the axillary spaces and attempting to raise him you will notice the looseness of the shoulder muscles, permitting the shoulders to rise much higher than normally. Sometimes they come up to the ears, showing the atrophy of this entire group of shoulder muscles. This is the only case in the family. As the mother is quite young there may be others. This disease belongs to the hereditary and family types of progressive muscular wasting. The pathology is to be found in the muscle cells and not, as in the spinal atrophies, in the cord structures. Such patients may live a long time, but any intercurrent affection carries them off easily. We have at the present time in the Cook County Hospital a patient of this type who is about 30 years old and a brother of his, 48, who has the same disease. There is no telling how old they may become yet. It is not a fatal disease, as is the spinal cord variety. The disease is usually not recognized at this stage because of the very slight weakness present. Later everybody can diagnose it.

The treatment is unsatisfactory. In the early stages we endeavor to strengthen the muscles by electrical stimulation and the administration of gradually increasing doses of strychnia, administered by mouth or hypodermically. It is just in such cases where the dose of strychnia is made as high as the patient can tolerate without producing strychnin poisoning. Hygienic measures are not to be disregarded.

DISCUSSION OF DR. GRINKER'S CASES

Dr. Max Reichmann:—I have been fortunate enough in the last three years to have four patients referred to me with this disease. Dr. Church published these cases in *The Journal of The American Medical Association* last July. In

all the cases Roentgen diagnosis was made without knowledge of any of the symptoms or any history. The first case was one which Dr. Church saw with Dr. Wood, and I pointed out this enlargement of the sella turcica and suggested there might be a tumor. The second case was a young women with a pronounced tumor of the sella turcica. She was operated on here and died. The third case was a man with a pronounced excavation of the sella turcica. He was operated on in Vienna, and is healthy to-day. Dr. Grinker's case is the fifth. Dr. Steindler took this plate, and it shows very beautifully the outline of the tumor in the sella turcica. The diagnosis by Roentgenograms of tumor of the hypophysis is quite a different matter, and in looking up the literature I find there are only three cases reported in the journals outside of these cases which Dr. Church reported.

Dr. L. Harrison Mettler:—These patients are especially interesting to neurologists and biologists because of certain physiologic and histologic observations made in cases of this class.

The first case, as Dr. Grinker says, belongs to a class that is not difficult of diagnosis. In fact, the signs of pituitary tumor are among the most definite localization signs of any that we possess in connection with any form of intracranial neoplasm. The sleepiness, the trophoneurotic changes of acromegalic type, and especially the eye findings, notably the bitemporal hemianopsia, are all but pathognomonic. I reported before this society not so very long ago a typical case.

The particularly interesting feature to me in this class of cases is the suggestion made by Gaskell that the reason why disease of the pituitary gland (especially the anterior part of it), though situated so deeply at the base of the brain, gives rise to trophoneurotic symptoms, resembling broadly the symptoms observed in disease of the thyroid and related glands, is that there is a separation of the anterior part of the hypophysis from the related thyroid group of glands during the embryologic closing of the archenteron at the back of the buccal cavity. The infundibulum, carrying the hypophysis at one end and opening into the central canal of the cerebrospinal axis at the other, represents a part of the primitive alimentary canal. When the present alimentary canal was evolved the associated glandular structures got separated, part remaining with the thyroid in the throat and part being enclosed in the cranial cavity. The trophic resemblances between acromegaly, cretinism, exophthalmic goiter and similar affections are easy of explanation if Gaskell's hypothesis is correct. This biologic suggestion seems to me to open up a far more interesting question than the mere clinical manifestations of these more or less related diseases—clinical manifestations which usually are so simple, definite and easily observed!

In connection with Dr. Grinker's second case, I would like, if time permitted, to refer to a number of things in regard to the dystrophies that are of unusual interest to the neurologists. Dr. Grinker referred to the fact that the dystrophies, of which his case is an example, are primarily muscular, and not nervous, troubles. Strictly speaking, that is true. The life-period of the muscular elements is diminished as compared with the life-period of the other tissues of the body. There is nothing extraordinary about this, however, for it is a common observation that other tissues, the teeth and hair, for instance, atrophy and die in some families before the other tissues of the individual break down. Through some hereditary influence there is a differentiation of the normal period of existence between the different tissues of the entire organism. In the case before us the muscles indicate the family weakness, instead of the hair and teeth as in other families.

Another point which I wish to bring out in connection with this case is that while the dystrophies are accepted as primarily familial muscular inadequacies, there is believed by many to be a closer connection between them and the ordinary spinal progressive atrophies than is usually supposed. Some biologists take the broad view that the lower motor neurons and the related muscles constitute, as it were, one organ. Certainly this is true physiologically. Therefore, whether we say the disease is primarily in the muscles, or primarily in the nervous elements, is a matter of little moment. It is in the neuromuscular organ and the

localization of the lesion is more interesting than essential. Indeed, the suggestion has been made that even these muscular dystrophies owe their trouble primarily to some biologic defect, as yet unknown, in the trophic functions of the related neural elements. If that is so, the spinal atrophies and the muscular dystrophies are not so sharply separated as we are inclined clinically to regard them. I deem this an extremely interesting question; and if, perchance, it is ultimately answered in this way, the answer will go far toward clearing up many of the confusing similarities between the dystrophies and the progressive atrophies of spinal origin.

CASES OF TORTICOLLIS.

Dr. Chas. M. Jacobs:—I have here for presentation a number of cases of congenital torticollis or wryneck. As the name implies, it is a twisted neck and, therefore, a deformity and not a disease. The congenital form is of intrauterine origin, and is a painless shortening of the muscles of one side of the neck, particularly the sterno-cleido-mastoid and less often the trapezius. Stromeyer first advanced the theory, which was generally accepted, that congenital torticollis was due to rupture of the muscles at birth with an accompanying hematoma and myositis, which ultimately destroyed the substance of the muscle, causing contraction and deformity. Whitman has tried to disprove this and has advanced many reasons, the most important of which, stated briefly, are: 1. That the rupture of a muscle in any other part of the body does not produce a myositis and contraction. 2. That it is impossible to cause myositis and contraction by any form of injury to the muscles of animals unless it be combined with actual infection with pyogenic germs. 3. Most of the cases of congenital torticollis, seen soon after birth, present no evidence of hematoma. 4. Seven consecutive cases of hematomas examined proved that not one of them was followed by torticollis.

The deformity is generally considered more common among females, and the left side more often affected than the right. My own experience has proven the contrary. At the time of birth the deformity may be so slight as not to attract attention, later the head is drawn to the side of the contracted sterno-cleido-mastoid muscle, which stands out as a tense band, and the chin is slightly elevated and points in the opposite direction. The sternal end of the sterno-cleido-mastoid muscle is more often contracted than the clavicular.

Congenital torticollis is simulated by cervical Pott's disease. In the latter there is restricted motion of the head in *all* directions and the head and chin are drawn to the *same* side. Tension on the muscle is painful. In the former, motion of the head is restricted in one direction only, *i. e.*, away from the contracted muscle. The head is drawn to the side of the contracted sterno-cleido-mastoid muscle while the chin points in the opposite direction.

In this young man you will notice the head is turned to the right, the chin points in the opposite direction and there stands out the sterno-cleido-mastoid muscle especially at its sternal and clavicular ends. You will notice the secondary distortion of his face. It may be of interest to know that this young man is one of twelve children and he has had a brother and sister operated on by me for torticollis.

In the second case, a young girl, you will notice this secondary distortion of the face, which is more marked, as shown in the picture taken before operation.

The third case is that of a woman, aged 30 years. She was operated on when 13 years old, but was not put in a plaster cast following the operation but wore a brace for six weeks with no improvement of her condition. She has a nephew afflicted in this way. She was operated on by me just one week ago, and you will notice that she is in a plaster cast with the head in an over corrected position, *i. e.*, the head is in the opposite position from what it was before operation.

Here is a case operated on one year ago, with no return of the deformity.

Dr. Daniel N. Eisendrath:—What method of operation do you use in these cases?

Dr. Jacobs:—I prefer the open operation, as there is less danger of cutting an important blood vessel. The open operation consists of making a longitudinal incision one-half inch above the clavicle, over one of the contracted ends of the sterno-cleido-mastoid muscle, beneath which a groove director is passed and on which the tendon is divided. If necessary the other tendon is cut in like manner through the same incision. The divided ends are left alone, as they will unite in four to six weeks by the formation of a new tendon. The skin incision is closed with interrupted stitches of fine cat-gut. A plaster cast is then applied from the head to waist, with head and chin in the over corrected position.

So far as the other methods of operating are concerned, with the exception of subcutaneous tenotomy, I have had no experience.

Regular Meeting, Oct. 27, 1909.

DISCUSSION ON THE PAPERS OF DRS. SPILLER AND CUSHING.

Dr. D'Orsay Hecht: I think there can be no dissenting opinion as to the character of this meeting. The remarks of Dr. Marvel, of Dr. Reichmann and our distinguished guests, Drs. Spiller and Cushing, have certainly been instructive, and I think each and every one of us feels under great obligation to these gentlemen for the admirable presentation of their respective topics.

Those of us who follow the trend of neurologic thought, either purely neurologic or neuro-surgical, as set down in the literature by the master minds, see, I think, reflected in the addresses of this evening work of very much the same high standard of excellence. Surely there are none better qualified in this country to speak authoritatively on the neurologic and neuro-surgical aspects of brain tumor than Drs. Spiller and Cushing. These gentlemen have brought to their task the very best preparation, the very best critical faculty, the very best judgment, and, it is needless to aid, monumental industry. This brain tumor problem, as we view it even to-day, is a most perplexing one. And yet, if we for a moment reflect on the fact that the entire subject is in a modern sense not more than forty years old, and that the greater part of our exact information has come to us only in the past decade or two, we may point with pride to our activities and advances in this field. Particularly is this true of the surgical achievements, prior to which the studies in cerebral localization and topography were the concern chiefly of the physiologists, and confined to the lecture room and laboratory. The practical importance of their earlier labors have been borne in upon the general practitioner only since the surgeon has given proof of the operative possibilities within the skull.

From clinical premises brain tumor symptoms not infrequently bristle with uncertainties and contradictions. At least, this is the impression that I have gained from the literature, from general discussions and a limited personal observation. If we revert for an instant to the remarks made by Dr. Spiller as to the value of epileptic seizures, of the phenomena due to secondary hydrocephalus, of the misleading symptoms that may arise from the gliomata, we have enough to ponder and make focal diagnosis indeed difficult. Now, when we add to these confusing factors others which, for lack of better understanding, have been classified under the elastic name of pseudotumor cerebri, we are, in a way, mystified. I think this particular group designated by Nonne as pseudotumors, in which tumor symptoms appear in their most classic form without the least pathologic evidence thereof at autopsy, have not received sufficient emphasis in the paper just read. May I venture the opinion that cerebral arteriosclerosis, when present, may so closely simulate the picture of brain tumor that in these cases of pseudotumor it is the responsible underlying factor for the tumor syndrome? This is a chapter concerning which we are still much in the dark.

If we accept the statement made by Collier in *Brain* not so very long ago, that all the cerebellar tumors observed during a period of five years at the National Hospital, London, were properly localized *intra vitam*, as shown both at the time of operation and necropsy, and add to that testimony some of the brilliant successes recorded only within the past year or two in an intracranial field formerly regarded as wholly inoperable, the hypophyseal region, we have increasing good cause to be optimistic.

So far as my personal experience is concerned, it has been limited, but interesting and instructive. I am sure I have thought hard and long about the brain cases I have seen, and probably have been more often disappointed in my conclusions than pleased. I observed a patient last December in whom the autopsy finding was almost identical with the one shown on the screen by Dr. Cushing as a large glioma. The specimen I refer to was about the same size as the one shown to-night. The patient was a woman, sixty-odd years of age, whose symptoms came on, developed and remained stationary until the date of her death, all within the period of six weeks from onset. There was mixed aphasia, a Babinski sign and slight paresis of the right leg. The post-mortem examination revealed a glioma filling the largest part of the middle of one hemisphere, entirely occluding one of the lateral ventricles, leaving the other greatly distended. This case emphasizes the teaching that large gliomata may occur without interfering with the continuity or function of the nerve fibers embedded in the tumor mass.

Dr. Spiller's paper appeals to me as a commentary on the atypical symptoms in brain tumor. He has departed from text-book traditions and viewed the subject broadly and critically. In his recommendation of the cases that should come for operation he is wisely conservative. He does not omit to credit syphilis with its wide range of possibilities in the brain and the proportionate amount of good that may follow the adequate administration of antisyphilitic therapy.

The brain surgeon takes the attitude, and justly so, that cases of tumor should be brought to him in their earliest stages. Much has been written concerning the advisability of such early reference. I, too, share in the belief that whenever it is possible to diagnose a brain tumor early, from primary focal symptoms that are perfectly clear, that may prove to be the best time for surgical intervention. It is a regrettable fact, however, that only seldom do we see the cases early, in the period of their onset. They come to us for diagnosis, clouded and obscured by secondary hydrocephalus, with symptoms referable to secondary pressure and often difficult to disassociate from those of primary focal importance.

I shall not detain you at greater length, since the hour is late and other gentlemen are to follow me in this discussion. I should merely like to add that with a more and more accurate neurologic localizing diagnosis, we may expect to find ourselves in a more comfortable attitude concerning the percentage of successful results from operative measures. The team work that has existed for some time in European centers, so splendidly typified by the work of Oppenheim and Krause in Berlin and emulated in the East, particularly in Philadelphia and Baltimore, if properly inaugurated here in Chicago, should be productive of better results than we have been able to obtain, if I may assume that we have only obtained indifferent results. We should always bear in mind, however, that of the cases terminating successfully only the smallest percentage really afford a good prognosis in the radical sense of that word. I should like to ask Dr. Cushing whether he concurs in the belief that 4 per cent. of the brain tumors that come to operation are entitled to be grouped as radical recoveries.

Dr. Hugh T. Patrick: Dr. Marvel let fall what probably was an inadvertent remark when he said that nowadays we do not pay so much attention to strict localization. Nowadays we pay more attention than ever to strict and accurate localization, and localization nowadays is more exact than it ever has been. But owing to the occasionally still existing and apparently inevitable inaccuracies of the best of localization by the most approved methods, we find we are not absolutely accurate, and so the surgeons have long since taken this to heart and have made a very large opening. One of the pioneers in this direction has been Dr. Cushing.

Dr. Spiller has said that the neurologist sees these cases early. He does not. It is the general practitioner who sees them early; the neurologist sees them later and the surgeon later still, in fact, often too late to accomplish much good. A peculiar misfortune I have in many of the deferred cases coming to me for diagnosis was that the possibility of brain tumor seems never to have been thought of. The headache from which the patient suffered was attributed to something else. The dizziness was attributed to something else. Ocular palsy was ascribed to

something else. And vomiting in particular was credited to something else, and likewise even focal symptoms. Tumor of the brain is not a very rare lesion. It occurs pretty often, and if we would just keep this in mind with a few of the classical symptoms, a great many more tumors of the brain would be recognized early and would be relieved either by radical operation or by decompression in time to really accomplish some good.

One other very common error, I think, is persisting too long with the antiluetic treatment, especially in a patient known to have had or who is reasonably supposed to have been infected with syphilis. There is no reason why a man who has had a chancre may not have a glioma or endothelioma or any other form of intracranial growth. Simply because he had, once upon a time, undisputed syphilis, the antiluetic treatment is persisted in long after the thing has been proven to be uttterly refractory. Sometimes, when there is no reason to suspect syphilis at all, the antiluetic treatment is given for the purpose of exclusion and is persisted in long after a reasonable period. Needless to say, during this period it should be pushed to the limit.

Another mistake I have seen rather frequently and have perpetrated myself, but one which should never be made, is overlooking a tumor in a patient who has been for years the subject of migrainous headaches, the headache which comes from the tumor being ascribed to the old migraine or thought to be a mere variation of it.

I was glad to hear Dr. Spiller mention the fact that glioma of the pons and medulla may exist to a tremendous extent without the death of the patient. It is certainly one of the pathologic marvels of the human body that a glioma, especially in younger people, of the pons or medulla, or both, may persist for a long time, may cause confusing symptoms at first, be entirely inoperable and invade these structures to an extent which seems to be absolutely compatible with life, though the patient lives for a long time.

Dr. Cushing, in speaking of the other possible diseases which might give rise to the symptoms ordinarily due to brain tumor, omitted to mention multiple sclerosis. Please allow a neurologist to note the obvious omission, for if there is anything which causes confusing cerebral or cerebrospinal symptoms, it is multiple sclerosis and there is no question that once in a while it simulates brain tumor.

Just a word about pseudotumor, because recently for the second time I have gone through the unfortunate experience of advising an operation on what seemed to be clearly a brain tumor. The first case came to autopsy. The physician at a distance, where the operation was made, got a post-mortem and wrote to me that there was no tumor found. We could not believe that he had good eyes, but he sent the brain and we were entirely unable to discover any sort of lesion whatsoever. Within a week I have had a young woman operated on for brain tumor who had all the clinical symptoms of it except choked disk or papilledema. No tumor was found, nor was there any evidence at operation of increased tension. I believe this case to be one of pseudotumor, although I do not know for sure because we have not had a post-mortem. It probably, however, is such a case and goes as one more bit of evidence to show that whereas the majority of cases of brain tumor are very easily recognized, and whereas in a large proportion of these cases the tumor may be absolutely accurately localized, in some instances the diagnosis of tumor itself is exceedingly difficult, in a good many cases exact localization is absolutely impossible and in some others, even when we seem to have every justification to make a diagnosis of tumor and to localize it, there is no brain tumor to be found at all.

Dr. William H. Wilder:—In speaking on the ophthalmologic side of this question, I wish to confine my remarks to the intraocular signs that are so frequently seen in brain tumor. For the changes taking place in the head of the optic nerve we have heard the term papilledema used by Dr. Spiller, a term that was suggested by Parsons, a well-known writer on the pathology of the eye. There is some question as to whether this term papilledema is any improvement on the old term of choked disc, the "stauungs papille" of the Germans, which seems to be quite expressive and non-committal, whereas papilledema would seem to indicate

that we have a lesion the result of an edema of the papilla, which may be true in some cases but not in all. The idea that the lesion is primarily an edema depends largely on the theory proposed first by Schmidt-Rimpler and Manz, that there is distention of the optic nerve sheath with the cerebrospinal fluid as a result of increased intracranial pressure. There are numerous instances, as has been shown by the illustrations we have seen this evening, where it is conclusive that this distention of the optic sheath is sufficient to explain all of the conditions, so that the theory of Schmidt-Rimpler and Manz, that there is a mechanical compression around the head of the optic nerve sufficient to cause internal congestion of the papilla, will explain the nature of these cases. But there are numerous cases which it is impossible to differentiate from an inflammation of the nerve, a true optic neuritis, which if intense is a papillitis. It is in these cases that we may quite easily fall into error. It is in these cases where the physician who is not an expert with the use of the ophthalmoscope, and I may even say the ophthalmologist, is liable to err in speaking of an early optic neuritis as a beginning choked disk. When the condition is far enough advanced and typical, there is no mistaking it and those who use the ophthalmoscope with any facility have no difficulty in recognizing it.

Again, in these cases of papillitis or choked disc we may have for a time a considerable swelling of the head of the optic nerve without very much impairment of the vision, unless it be involvement of the visual fields, as was well shown by Dr. Cushing, so that oftentimes the physician may be deceived if by inquiring of the patient whether or not his vision is lowered, he finds there is practically no impairment of central vision. Furthermore, this condition of papillitis may be present early in the history of a case of brain tumor, or may be delayed and not appear until near the end. These facts emphasize the importance of making early and repeated ophthalmoscopic examination in any case of suspected tumor of the brain.

Again, we find in papillitis or choked disc, even if it is of mechanical origin, after it has existed for a certain time, inflammatory changes that have taken place about the head of the optic nerve and in the adjoining retina, so that we have a true inflammatory process following upon this mechanical process of edema.

A matter that is extremely important in connection with the therapy of these cases is, that if the case is treated by decompression before this inflammatory change has supervened we may hope to give permanent relief so far as the condition of the eye is concerned and so long as we can reduce and keep reduced the intracranial pressure. I wish to lay emphasis upon this particular point because of the fact that if operation should be delayed and the condition of the optic nerve passes into this true inflammatory stage, then the damage may be more or less permanent.

There is one other point I should like to mention, and that is as to the relative value of choked disc or papillitis as a diagnostic measure. We must bear in mind that if we find a choked disc it is extremely suggestive. If in a given case of suspected intracranial growth we find no choked disk, we can place very little reliance on the negative finding.

Another very important point to remember is that we may have papillitis or choked disc occurring in other conditions as typical as in cases of intracranial growth. It may occur, for instance, and does frequently, in meningitis, in brain abscess, in hydrocephalus. More rarely we will find it in certain diseased blood states, and I have seen cases of anemia where papillitis was just as extreme as any I have ever seen in a case of cerebellar growth. We may have it also, although rarely, in cysticercus and in sinus thrombosis, and we may have it also in certain peculiar malformations of the cranium.

Furthermore, we should also bear in mind the relation of syphilis to the intracranial lesion that is causing the papillitis. In 200 cases of choked disk, Kampherstein found that 23 or 12 per cent. were dependent on syphilis, 8 gummatous meningitis, and 15 other syphilitic cerebral lesions. Schott, in 50 cases of choked disc examined, found a percentage of 17 of syphilitic origin, and Uhthoff, in examining 100 cases of papillitis, found that in 14 per cent. the lesions were

syphilitic, or at least showed evidences of intracranial syphilis. I bring up these points in connection with the matter of treatment of these cases with antiluetic measures either before or after the operation of decompression. In many of them I should say decompression was quite justified as an operative measure to reduce the swelling of the optic nerve, and after this has been done antiluetic measures should be instituted.

As to the very interesting observations that Dr. Cushing and Dr. Bordley have made in regard to the fields of vision in these cases, I only wish to say a word. These observations are extremely instructive, but one should not lose sight of the fact, in drawing conclusions from them, that we can frequently get inversion of the color fields in conditions of nerve fatigue. It is a question as to just how much reliance we can place on this as one of the valuable eye signs of brain tumor. As Dr. Cushing has properly said, formerly this would have been regarded as evidence of hysteria. We find it in conditions of marked nerve fatigue and in such cases as intracranial growths we might expect such nerve fatigue.

I wish to express my personal gratitude and thanks to these gentlemen for coming such a long distance to address this society, and I am sure we have listened with the greatest interest and profit to their valuable contributions.

Dr. L. L. McArthur:—These papers are so complete that they are scarcely open to discussion, containing as they do practically all we know in regard to this subject. Answering first with reference to the query made by Dr. Spiller as to exploration of the brain by puncture, preliminary to or exploratory to brain tumor and brain affections, I desire to respond by saying that ever since Roswell Park, twenty years ago, emphasized the Souchon puncture, then recently presented to the American profession, I have had so frequent success in its use as to urge its continuance, notwithstanding the arguments with regard to danger in its employment. There are men present to-night who have seen, for instance, an abscess in the silent zones detected promptly by a simple drill hole made through a minute puncture in the scalp and the insertion of the hypodermic needle. A hemorrhagic cyst has been found by this means, and I deem it quite feasible of employment, although at some risk to the patient. I cannot advocate going to the extent of some of the German physicians who have made the puncture under cocain, in their office, on patients sitting there awaiting examination, and that to the extent of reporting fourteen or fifteen cases so treated.

I desire to thank Dr. Cushing for calling my attention to a fact which I had not known, that the majority of cerebellar cysts are simply cystic dilatations in other tumors, particularly the gliomata. I have had two successful drainages or emptyings of cerebellar cysts, with recovery of the patients, who still remain well so far as I know. These cases occurred in the practice of Dr. Archibald Church. Emphasis should be laid very strongly on first securing, in the operation on a cerebellar tumor, relief of pressure by going close to the foramen for escape of cerebrospinal fluid. I have undoubtedly shortened the life of a patient before appreciating that fact, the cerebellum bulging through the open dura, with no possible means of reducing it. I have to take issue with what appears to be the advice as to the closure without drainage of all these brain operations. The question here is identical with that elsewhere, and will probably arouse discussion. Some will say no drainage, while others will say always drain. I believe there are occasions and cases where judgment will dictate the provision of an escape for an oozing which cannot be controlled at the time of operation, for the escape of blood that may accumulate through oozing from the bony wall or flap itself, and the formation of a clot which can be avoided by the use of a temporary drain of from 48 to 72 hours made of very small rubber tubing, or of what I usually employ, two or three silkworm-gut strands twisted into a rope.

Dr. J. B. Murphy:—The able papers presented by Drs. Spiller and Cushing and the demonstration by Drs. Gronnerud, Marvel and O'Donnell, are most instructive, the ground covered extensive, and their conclusions are the results of careful observations, keen analyses, and extensive experience. Discussing the subject from a practical standpoint, I wish to mention, parenthetically, the classification of tumors which I have found best adapted to my clinical work.

This classification of tumors, in the order of their frequency, is: 1. Tuberculoma. 2. Endothelioma. 3. Syphiloma. 4. Glioma. 5. Carcinoma; metastatic, most frequently from mammary carcinoma. 6. Cysts; traumatic (hemorrhagic and degenerative); parasitic (echinococcic, etc.). 7. Fibroma.

In addition to these we have the less frequent varieties, the angiomata, lipomata, teratomata, psammoma, etc.

A general analysis of the tumors shows that the most frequent are not of themselves the most destructive of life; that is, the tuberculomata, endotheliomata, are situated superficially, many of them originating in the meninges, not infiltrating but encapsulated and easily enucleated if their localization can be accurately determined. This is the most favorable side of tumors, though the most infrequent side.

The infiltrating varieties, gliomata, sarcomata and carcinomata, rarely have even approximately definite margins and will continue to be fatal lesions in the brain, as they are in other portions of the body, regardless of the advancement of our technic for their removal. They are, however, the least frequent, although the inoperable ones make a more lasting impression and accentuate in our everyday work, giving the impression that they are really more frequent than the statistics show.

The Self-limitations in the Growth of Tumors.—This is particularly true of the tuberculomata, less of the endotheliomata, frequent in syphilomata, rare in gliomata, common in cysts, never in carcinomata. The knowledge of this fact should force on us the importance of timely action to prevent the destructive effect of increased pressure during the development or continued growth of these neoplasms. The more recent experiences show that a larger percentage of the tumors are self-limiting in their growth and that a relief of the pressure avoids one of the most baneful conditions, that of blindness, due entirely to intracranial pressure. Within the last two years in Mercy Hospital we had four cases of this class in the hospital at one time. All recovered from the original disease by decompression operation without removal of the tumor.

The Diagnosis: Dr. Spiller and the neurologists in general can well be proud of the achievements in the localization of a large percentage of intracranial neoplasms.

While the focal or local symptoms of a number of these lesions are still obscure and probably will remain so for a long time, the analysis of the order of onset of symptoms, the comparative intensity, the varying relations of degree of involvement of motion, sensation and tactile sense materially aid in estimating whether the tumor is cortical, subcortical or central, and in locating the convolution which is involved. The symptoms are best divided into two great classes: 1. Pressure. 2. Invasional or local.

The first are common to almost all of the cerebral neoplasms and are practically always initiative. They are cephalalgia, emesis and papilledema or choked disk. To these are added the second: vertigo, hemiopsia (vertical and horizontal), homonymous hemiopsia, convulsions, paralysis, paresis and the pronounced head positions of the subtentorial tumors, which, with the clinical history, aid in determining the location and making some estimate of the probable pathology of the lesion. The persistent tendency of the head to turn to the opposite side to the lesion in cerebellar tumors has a positive diagnostic value, as shown by Gordon, and the increase of pain and vertigo when forced to the side of the lesion adds to the significance of the symptom.

From a practical standpoint, for the purpose of saving the greatest number of lives, for the purpose of avoiding most lamentable conditions that result from tumors, even worse than death, the early recognition of the symptoms of pressure, headache, nausea, vomiting and choked disc by the general practitioner is of the greatest importance. By the early recognition of these pressure symptoms he can call to aid the specialist who will localize the tumor in a large percentage of the cases, remove many of them, and if not removed relieve the pressure and thus the pressure symptoms and avoid the blindness.

The Technic: The technic of the operations has been so thoroughly dwelt on by Dr. Cushing that it is needless to mention it here, and indeed the technic is of minor importance in the surgery of the brain. The recognition of the early symptoms, the diagnosis of the location, the estimate of the pathologic lesion, the timely action of the general practitioner, specialist and surgeon, should be the dominating factors of the present stage of cerebral surgery. The limitations of technic are fairly well understood.

From our personal experience we would say that the area of cranial elevation in the past has been too small to admit of a thorough examination of the supposed field of invasion. The large "U-shaped" or quadrilateral osteoplastic flap made with beveled edge should be the uniform cranial opening. While in many positions it is much easier to trephine and remove the bone with a rongeur to enlarge the opening, the sequences of a removal of the bone permitting the development of a hydrocele or an encephalocele are very annoying and disfiguring to the patient who recovers and can even endanger his life as much as the original lesion.

I have under my observation at the present time four cases, three of decompression and one of removal of a tumor in which the deformity resulting from the resection of bone is most annoying, and two of the patients express themselves by saying they would rather be dead than have these deformities.

In the technic of decompression in the class of self-limiting tumors the restoration of the cranial conformation and its maintenance become very serious and important problems. It has been our custom in these operations to elevate a large section of bone, in some of them to interpose a fascia from the side to prevent the bone reuniting and permitting it to yield to the increasing cerebral pressure. It is, however, retained for the purpose of subsequent implantation, should that become desirable or indicated. In one of the decompressions under my observation, which was some two years ago, the tumor has apparently entirely subsided in its growth, but there is an enormous hydrocele as large as a croquet ball which I have been unable to control. I have operated on it and endeavored to close the opening but have failed. There is no protrusion of the brain. Indeed, on one occasion after spinal aspiration in this case all the excessive fluid was absorbed and there was a depression at the openings over both cerebellar lobes. In a subsequent operation, since this discussion, I operated, separating the dura from the scalp, allowed the fluid to escape and implanted a plate above the dura made up of six sheets of celluloid paper agglutinated and softened by acetone just before insertion, so that it was soft and as easily molded as wet pasteboard. It was inserted extradurally, was three inches in diameter and extended beneath the bony margin for one-half inch over its entire circumference. The scalp was sewn over this plate. The latter was held depressed for one-half hour until it hardened. It retained practically the exact conformation of the skull.

In decompression and exploratory operations the dura should be freely excised. The hemorrhage can be readily controlled during the operation by a "T"-shaped hemostat, which is the best for that purpose, and always subsequently controlled by a catgut suture. The bleedings from the pia, however, are not easily controled by mechanical means, and the discovery by Sir Victor Horsley that the placing of a fragment of muscle over a bleeding vessel of the pia produces hemostasis is an important one.

The subtentorial tumors are usually at the pontine angle, rarely in the cerebellar substance. The subtentorial tumor produces papilledema early and destroys vision with more speed and certainty than pretentorial tumors.

Decompression is indicated for: 1. Papilledema with impending optic atrophy. 2. Continued emesis. 3. Cephalalgia.

Pretentorial tumors are situated usually in the temporal fossa and may be bi- or unilateral. A large area of bone should be elevated or removed.

The life expectancy of decompression operations cannot be given without classifying the pathologic lesions causing the indication for it, which often cannot be determined at the time of operation. The clinical courses, however, show that

many of the growths or conditions causing the pressure symptoms subside permanently or at least for years, so that the patient is apparently well except for the blindness which is always avoidable by a timely operation.

The dangers in the operative procedure are hemorrhage from scalp, bone, veni Santorini, dura and pia. The elastic constrictor can often be applied advantageously to control the bleeding from the scalp. The T-shaped hemostat is far the best for the control of additional scalp hemorrhages. The iodoform, wax or tallow readily controls the hemorrhage from the bone surface and diploe. The dural hemorrhage can be stilled by a fine catgut suture, and the pial by catgut sutures or by placing a small shred of muscle fiber over the bleeding point. This has been used very effectually by Horsley. The fiber can be taken from any muscle in the margin of the wound.

After palpation the blunt probe or needle puncture of the brain occasionally leads to considerable hemorrhage; unless the tissues are grossly abused it is not alarming. The invaginating needle is the best for testing for cysts, as the needle opening does not become plugged with brain tissue before the cyst is punctured.

Collapse from the vasomotor disturbances due, as is generally supposed, to the loss of cerebral fluid, is often very alarming. The great divergence in the degree, in cardiac and respiratory depressions, is not explained by the change in the intercranial tension. The signs of impending death which so suddenly appear are often very perturbing. The patients, however, rally from this state or are brought out of it most rapidly by increasing the blood pressure through the intravenous injection of salt solution. We always have this at hand, and the best apparatus is an ordinary fountain syringe connected by a rubber tube with an exploring hypodermic needle.

After dividing the skin the vein can be picked up with two tissue forceps and the needle inserted through its wall, parallel to its long axis, without dividing the vein with the scalpel. By this method there is no loss of blood or time in starting the flow of saline solution. A simple catgut ligature can be thrown around the needle and vein and the latter ligated. The blood pressure should be fully restored before the patient leaves the table.

Infection following these operations is now a very rare occurrence; with the aseptic precautions essential for effective work a drain is rarely ever advisable. No serous surface tolerates a drain for any length of time without hazard. Gentlemen, I thank you for your attention.

Dr. Frank Billings:—I would like to ask whether it is necessary to give antiluetic treatment nowadays when we have the Wassermann test?

Dr. Spiller (closing the discussion):—Regarding the question of papilledema, to which Dr. Cushing called attention, I will say that this word has been considered by some to be more expressive than choked disk. If I am not mistaken, Dr. Cushing prefers choked disk, believing that it is due to an increase in intracranial pressure. The evidence at present is that while increase in intracranial pressure is a most important element, it is not the only element, as has been shown by Gowers in the last few months.

As to another point Dr. Cushing brought up, namely, hemianopsia being produced by a lesion of the occipital lobe, of course it will be produced if the lesion is not at the base of the occipital lobe. It is evident that the optic radiations extend to the base of the occipital lobe, and, as Dr. Cushing mentioned, a tumor there is likely to cause blindness before papilledema can be detected. I have seen gliosis to which Dr. Cushing has referred, involving the greater part of the spinal nerves.

As to the Wassermann reaction, while it is most reliable, I am not convinced that it is absolutely pathognomonic. It has been found in a few cases where syphilis was not present, and while it is of the greatest importance, if I suspected syphilis and did not get the Wassermann reaction, I should be inclined for a reasonable time to give the antisyphilitic treatment.

If I have given the impression, as Dr. Murphy seems to imply, that these cases are not diagnosable, I should like to remove that, because I am very certain in most of the cases a diagnosis of tumor of the brain, and in many of them a diagnosis of the location of the tumor, is fully possible.

Regular Meeeting, Nov. 24, 1909.

At the meeting of November 24 the following papers were read: "Pellagra, a Detailed Presentation of the Subject," by Passed Assistant Surgeon C. H. Lavinder, Washington, D. C. Discussion opened by James Nevins Hyde. The Doctor showed a large series of illustrative plates and slides. Discussion was continued by Drs. Willhite, Pollock and Hamill.

By Chas. Spencer Williamson: 1. "Unusual Case of Enterolithiasis; Patient Having Carried the Same for Thirty-five Years." 2. "Case for Diagnosis—a Medical Case."

By Dr. Emil Ries: 1. "Some Rare Cases of Goiter." 2. "A Very Small Carcinoma of the Uterus," with remarks as to the microscopic diagnosis from curetted particles.

By B. C. Corbus and F. G. Harris: "Practical Demonstration of the Principles and Technic of the Original Wassermann Reaction."

Regular Meeting, Dec. 1, 1909.

The following papers were read: By Edward F. Wells: "The Medical Aspect of Those Toxemias of Pregnancy Which Lead Toward Eclampsia."

Abstract: Some of the pertinent facts of etiology; of the anatomical changes in the kidneys, liver, thyroids, hypophysis, etc.; of the physiological departures from health, as shown in the urine, blood, tissue, lymph, intra- and extra-vascular circulation, etc.; relating to a therapeutical diagnosis; of the elements of medical management.

By A. J. Ochsner: "Thyroidectomy." (Illustrated with lantern slides.)

Abstract: The paper is a discussion of the selection of cases, the time of operation, the preliminary treatment and the dangers of operation, including anesthesia, hemorrhage, shock, hyperthyroidism, injury to the laryngeal nerve, parathyroid glands and trachea, and reference is made to the importance of after-treatment.

Discussion opened by F. A. Besley.

By S. Krumholz, "Treatment of Exophthalmic Goiter with Serum of Thyroidectomized Animals." Discussion opened by Sidney Kuh.

Abstract: 1. Theory upon which the serum treatment of this disease is based.
2. Review of literature on the subject.
3. Report of 14 cases under my observation and 12 cases of Dr. Sydney Kuh.
4. Conclusions: Therapeutic value.

By Axel Werelius: "The Pathology of the Thyroid and Hematology in 100 Goitrous Chicago Dogs."

Abstract: Haematology of dogs in general and in goitrous dogs. Types of canine thyroid. Pathologic conditions. Relative presence of goiter and type of struma in male and female. Relation between hyperplasia and colloid goitre to size of gland. Relation of size of gland in male and female. Lack of symptoms referrable to thyroid disturbance in strumous dogs. Demonstration of anatomic pathology in 20 goitrous dogs. Microscopic slides.

By W. J. Marvel: Demonstration, "Anatomical Preparations Showing the Various Steps in Brain Surgery and Brain Localization."

Regular Meeting, Dec. 8, 1909.

This meeting was a symposium on organotherapy. The following papers were read: By A. C. Crofton: "Historical Review and Critique."

Abstract: Antique and medieval organotherapy; accomplishments of modern organotherapy and some of its fallacies and inconsistencies; the outlook for organotherapy.

By C. E. de M. Sajous, Philadelphia, Pa.: "Adrenal Therapy." (By invitation.)

Abstract: Prevailing teachings as to the function of the adrenals are not such as to render possible an intelligent interpretation of the physiological action of adrenal preparations. Many of the phenomena awakened by the latter have remained unexplained. The function that the writer has ascribed to the adrenal secretion, viz., to take up oxygen from the pulmonary air and sustain metabolism as a constituent of the hemoglobin molecule, explains all these phenomena and also the familiar rise of blood-pressure. Brief outline of the facts which sustain this position. The diseases in which adrenal preparations have been found of value can be divided into three classes:

1. Those in which they compensate for functional incompetence of the adrenals; 2. Those in which they enhance the cardiovascular equilibrium; 3. Those in which they restore the respiratory equilibrium in the lungs and tissues, i. e., the vital process itself; and 4. Those in which they promote the efficiency of the immunizing process.

Conclusions as to the diseases in which adrenal preparations are superior to other available remedies, or in which their effects warrant further trial.

By George Schmauch: "Orchitic (spermin) and Ovarian Therapy."

Abstract: Genital glands were first to be connected with internal secretion. Most observations made on women, but seen by male eyes. Women with their periodical changes in the functional output of these glands, differ vastly from man. Always ready objects for the mutilating operations of the too willing surgeon. Specific influence of the germinal glands on the somatic development. Their antagonism to other ductless glands. Periodicity in woman's life. Menstruation and ovulation two different phenomena. Castration does not produce the opposite sex, but an asexual form. Difference in the validity of testicles and ovaries and their interstitial cells. The ghost of the so-called small cystic ovaries. Removal, transplantation of ovaries; orchitic therapy and use of ovarian substance.

By James B. Herrick: "Thyroid and Thymus Therapy."

Abstract: Necessity for more extended experimental, laboratory and clinical observation before the action, possibilities for good and evil, and limitations of thyroid extract are well established. Various preparations. Physiologic and toxic action. Its use in myxedema of various types; cretinism; infantilism; simple goiter; exophthalmic goiter, obesity; skin diseases; diseases of bones. Other uses. Conclusions.

By Max Reichmann: Demonstration, "An Easy and Simple Method of Taking Roentgenograms of Dense and Thick Parts of the Body."

Abstract: By using Dr. A. Kohler's method of two plates put together in one exposure and viewing them in a way to be demonstrated, a clear and definite picture can always be obtained.

By W. H. Ballenger: 1. "Presentation of Seven Cases of Frontal Sinusitis Operation; Four by the Killian Method; One by Kuhnt-Luc; Two by Denker." 2. "One Case of Laryngostomy for Stricture of the Larynx."

Regular Meeting, Dec. 15, 1909.

The following papers were read: By Coleman G. Buford, "The Non-Operative Treatment and the Truss Question of Hernia."

Abstract: Both neglected topics. Not opposed to radical cure by operation when there is no contraindication. Physicians should, themselves, measure patients for trusses, indicate pattern desired, fit and readjust trusses. Varieties and choice of trusses. Their manufacture. Use of trusses as aid in differential diagnosis especially when there is a relaxed internal ring with no perceptible visceral protrusion. Hernia of infants and the use of trusses among these.

By E. S. Judd, Rochester, Minn.: "Indications for Herniotomy." (By invitation.)

Abstract: More satisfactory to operate early upon young children when there is no disability period, thus saving the mother the anxiety and care incident to this condition. This is especially true since a large percentage of the cases will be forced to operation later. Much safer to operate during adult life than to follow any other line of treatment. Operate in old age if general condition of the patient warrants it.

By Paul Gronnerud: "Demonstration of Operations on Specially Prepared Cadaver."

Abstract: Demonstration of relational anatomy on specially prepared cadaver. Various forms of hernia: Indirect, direct and femoral. Types of operative procedures; Kocher, Bassini, Ferguson and Andrews modification. Diagnostic differential demonstration between direct, indirect, and femoral hernia.

By J. C. Goosmann: "Demonstration; CO_2 Equipment and CO_2 Ice Crayon."

Abstract: Practical demonstration of the principles and technic with a complete Liquid CO_2 equipment and the Goosmann CO_2 Ice Crayon to crystallize, compress, and shape solidified Carbon Dioxid for therapeutic purposes.

Regular Meeting, Dec. 22, 1909.

The following papers were read: By A. C. Cotton: "Masturbation and Pseudo-masturbation in Infancy and Childhood."

Abstract: Questionable differentiation. It the practice increasing? Report of cases. Some points in the etiology, pathology and treatment.

By I. A. Abt: "Survey of International Movement Concerning Infant Welfare."

Abstract: Infant morbidity and mortality is receiving international attention. Birth rate tends to decrease while infant mortality is excessive. In 1892 Budin organized first consultation for nurslings at the Charité; attracted widespread attention. Experience of Kellar, Lindemann, and Breuche at Magdeburg. Infant hospital at Düsseldorf, under the direction of Schlossman and the new Kaiserin Augusta-Victoria under Kellar and Langstein have been established in the hope of reducing infant disease and death. Experiences in England and America. Institutional care and outdoor treatment and consultations. Importance of breast milk in diminishing death rate. Importance of clean milk for artificial feeding. Importance of special training for physicians and nurses.

By J. W. Van Derslice: "Diagnosis of Rachitis."

Abstract: The use of the term rachitis is now rather loose. In general use the term as now used applies both to the disorder and to its resultant deformities. Rachitis is a dystrophy with a distinct symptom complex and for this condition only should the name rachitis be given. Importance of early diagnosis manifest as at this time can remedial agents best be used.

Discussion opened by Julia D. Merrill.

By William J. Butler: "Enteroptosis, in Children."

Abstract: Brief review of literature of enteroptosis. Local anatomical changes in position of abdominal organs part of a general habitus. The latter is recognized by a more or less characteristic body form. Clinical symptoms associated with sinking of abdominal organs. Occurrence of the habitus enteroptosis in children. Frequency of displacements. Periods of stress operative in bringing about splanchnoptosis, etc.

Discussion opened by R. R. Smith, Grand Rapids, Mich.

By F. W. Allin: "Baby Tent Idea."

Abstract: Organized effort to save the baby is relatively a recent thing. The Fresh Air Wharfs of New York and the Fresh Air Sanatoria of the Lake Front are among the first efforts to relieve the congestion of our great cities for the little folk. Its origin, its development, its spread to other cities. Its success.

By Wm. A. Pusey: "Demonstration; A Practical Demonstration of the Making of CO_2 Ice Crayon."

CHICAGO SURGICAL SOCIETY.

Regular Meeting, Nov. 5, 1909.

A regular meeting was held Friday, Nov. 5, 1909, with the president, Dr. Arthur Dean Bevan, in the chair.

Dr. A. E. Halstead reported a case of pulsating exophthalmos. The patient was Mr. B., aged 24 years, by occupation a farmer. He first came under observation on Aug. 27, 1909, when he was admitted to the Illinois Charitable Eye and Ear Infirmary. The following history was obtained: On Jan. 27, 1909, the wheel of a loaded wagon passed over the patient's head, just back of the left eye. The patient was unconscious for three days following the accident. So far as he could tell, the eye bulged much more at that time than it did when he entered the infirmary, the left eye turning sharply towards the nose. The eye appeared paralyzed, the lids were swollen and he could not close the upper lid, move his jaw or tongue or swallow. Roaring noises synchronous with the heart beat could be heard from the time the patient regained consciousness until he entered the hospital. He remained in bed two weeks following the accident, and during that time the sight in his left eye was very much impaired.

An examination of the left eye was made August 27. The left eye turned in 45°. The eye was very prominent and two-thirds of an inch farther forward than the right eye. The veins on the outside of the upper lids were very large and tortuous. The blood-vessels of the sclera were also enlarged, in its center there was a fairly dense cicatrix. The anterior chamber was shallow, the iris not quite perfectly round, but normal in color. Vision at this time in right eye, 20/30—3; left eye, 20/120. On September 28 the vision was again taken, when it was found to be 20/20 in the right eye and 20/50 in the left eye.

On October 10 the patient entered St. Luke's Hospital, and was referred to Dr. Halstead's service. At this time the left eye protruded forward, and deviated inward. The blood-vessels of the eyelid and eyeball were enlarged and tortuous; a pulsating tumor could be felt over the lid and in the inner angle of the eye; a bruit could be heard over the left temporal region and the patient complained of constant roaring noises, heard most distinctly in the left eye, and synchronous with the heart beat. On October 14 Dr. Halstead ligated the left internal carotid near its origin. An incision was made along the anterior border of the sterno-cleido-mastoid muscle. The blood-vessels were exposed and the internal carotid artery identified by making traction on a ligature passed around it, and feeling for the pulsation in the orbital tumor which had disappeared. The artery was now doubly ligated with chromicized catgut, and the skin closed with silk-worm gut. October 15, the day following the operation, the exophthalmos was not so marked as it was before the operation; the bruit had disappeared and a very slight pulsation could be detected only at the inner angle of the left eye, while the head noises and ringing in the ears were absent. October 16 the patient complained of constant pain in his left eyeball. October 18 the bruit remained absent, the pulsation at the inner angle was scarcely perceptible, the exophthalmos had slightly decreased. The patient complained of stiffness of the lower jaw. Up to the present time there has been no return of the bruit or head noises. The left eye still turns inward; there is some exophthalmos and the patient occasionally complains of pain in the left eye.

Dr. Edward H. Ochsner reported a case in which he extracted a bullet from the hip-joint. A probable diagnosis of bullet in the joint was made from the history and from the fact that the skiagraph showed the bullet in different locations at different periods. It did not seem possible that so large a bullet could travel such a distance unless it were within the capsule. He called attention to the importance of absolute immobilization during the healing of a joint injury. He believes that in such cases fair motion will be obtained in a very much larger percentage of cases by securing absolute immobilization than by resorting to the often recommended early, active and passive motion.

Dr. John E. Owens said that a few years ago he had a case somewhat like that reported by Dr. Ochsner, except that the bullet went in on the outer aspect, just below the anterior-superior spine. The bullet lodged in the upper portion of the neck, along the outer segment of the circumference of the head of the bone. The bullet was removed with considerable trouble, but he regretted to say that, having lost sight of the patient, a report of the condition of the joint could not be given.

Dr. Owens then reported a series of cases in which there were injuries to the elbow joint, and drew the following conclusions: 1. Such results are better than a tender and painful joint, and also better than a stiff arm in any position, and better than one whose motions are decidedly limited. 2. Resection is also an economy of time. 3. That the varied and complicated injuries at and near the elbow joints render diagnosis in many cases extremely difficult. 4. Dislocation of the head of the radius is frequently overlooked, especially if associated with a fracture in the upper fourth of the ulna, and such a dislocation should be expected where this fracture exists, and if the dislocation in question is present a fracture in the upper fourth of the ulna should be expected. 5. That a useful arm is to be expected if excision is properly performed. 6. That any dislocation of the upper end of the radius and the ulna of one or more of the combining constituents of the joint is to be looked for. 7. That errors in diagnosis are not confined exclusively to men of moderate experience, but the most experienced and successful cannot claim immunity.

Dr. Daniel N. Eisendrath said there is one point which Dr. Owens referred to that he believed is generally overlooked in these fractures close to the elbow joint, and that is the frequency with which these injuries are accompanied by severing or contusion of the nerve trunks of the radial, ulnar and median nerves. In a great many cases median and ulnar nerves are not severed, but are stretched across the end of the upper fragment in such a way as to produce symptoms similar to the actual severing of the nerve.

He saw recently, within the last week, a case of undetected, musculo-spiral paralysis following one of these comminuted fractures close to the elbow joint. It was a case where a doctor was being sued for malpractice on account of this injury to the musculo-spiral nerve following a comminuted fracture, and no effort was made at the time of setting the injury to avoid nerve injury, and no information given the family that such a thing had occurred, and no complaint made afterwards. He believes we are apt to think that nerve injuries can occur chiefly in the middle shaft, and overlook the fact that they are not so very rare at the lower end.

Dr. S. C. Plummer spoke of a typical case of excision of the elbow joint, where the functional results quite surpassed his expectations. The man was a switchman, who slipped and fell with his arm across the rail, and he said the car ran over his arm at the elbow. He does not believe this account of the injury, but rather that the car ran over the point of the elbow. The man's injury was a compound, comminuted fracture at the lower end of the humerus, leaving the forearm bones in contact. The muscles at the lower end of the humerus were all pulpified, fragments of bone hanging by shreds of muscles, and portions of ligaments. The ulnar nerve was entirely exposed for about four inches, standing out as if it had been dissected. The loose pieces of bone were removed, and the humerus sawed off. The ulnar nerve was covered with fascia and there were never any symptoms from the ulnar nerve. This man got a wonderfully good functional result, so good that he pleaded to be reinstated as a switchman.

Dr. Arthur Dean Bevan said that about six years ago, before the Surgical Section of the American Medical Association at Atlantic City, he reported four or five cases of elbow-joint injuries, limited, however, to dislocation, which the *x*-ray showed in every instance to be complicated with fractures. He operated on all of those cases and found that on exposing the joints and removing the fragments of bone which locked the dislocation and prevented reduction the joint recovered its function, if this was done early, within two or three months. In the really ancient cases in which the dislocation had existed for a number of months or a year or more, after the reduction he obtained a stiff joint in spite of passive motion and the breaking up of adhesions under an anesthetic. In two cases, instead of making a reduction, he made a resection of the lower end of the humerus, and obtained a very good functional result. His experience confirms that of Dr. Owens.

Dr. Daniel N. Eisendrath read a paper entitled "Ileus Due to Meckel's Diverticulum."

Dr. Wm. N. Harsha asked Dr. Eisendrath if a vaginal examination was made in this case, to which Dr. Eisendrath replied, "Yes."

Dr. Harsha said that in a case he reported to this society three or four years ago, a vaginal examination showed a distinct tenseness that would lead one to suspect a distended gut. The form was different in that the direction was directly downward from the ileum, and the terminal ligaments only two and a half or three inches long, reaching directly over the ileum, and attached to the mesentery of the ileum. In that case there had been two or three abdominal crises that had passed off without any serious consequences, and had not produced complete obstruction. When she was operated on the bowels had been obstructed almost completely for four days, with intestinal vomiting. He believed the differences in the symptoms in partial or complete obstruction are mainly the appearance of the patient, showing more or less profound disturbance, and the range of temperature, the temperature remaining subnormal longer in partial than in complete obstruction, owing to the delay in intra-abdominal infection. He thinks a rectal examination in these cases gives one an idea of the intestinal distention which would help to differentiate it from appendicits or other inflammatory conditions.

Dr. L. L. McArthur said, as illustrating the difficulties of diagnosis of ileus, caused by Meckel's diverticulum, he recalled a case seen in conjunction with Dr. Billings, in which he held firmly to the diagnosis of appendicitis, and the speaker to intestinal obstruction by band. The case became so desperate that operative interference was required. His inclination to fortify the diagnosis led him to

sweep his hand underneath the umbilicus immediately on opening the abdomen, and this band was found. The band had caught the appendix close to the caput coli, cut through it, and permitted a leakage with septic ileus as a cause of the intestinal obstruction. Dr. McArthur reported a second case.

Dr. A. J. Ochsner said regarding the diagnosis in cases of intestinal obstruction, that unless one has a definite reason for supposing the obstruction to be caused by some condition on the left side of the abdominal cavity, he believes the rule Dr. Eisendrath laid down is not good because about 80 per cent. of obstructions come from conditions in the right side. In some instances the condition may seem to be due to a mechanical obstruction and still be due to a perforated gall-bladder or duodenum, or even a perforation of an ulcer in the pylorus, just at the duodenal end, or it may be due to intussusception. The condition may be due to inflammation of the appendix, Meckel's diverticulum, perforation of a typhoid ulcer, perforation of the duodenum, gall-bladder, and pyloric ulcer. All these conditions he has seen in cases which were diagnosed as intestinal obstruction, and all these cases could be best discovered through an incision, splitting the right rectus abdominis muscle.

Dr. A. E. Halstead said he has been struck regarding the statistics of Meckel's diverticulum. It is well known they are found at autopsy in 2¼ to 3 per cent. of all cases. Statistics also go to show that nearly 5 per cent. of all obstructions occur from Meckel's diverticulum. He has seen only three altogether, one produced obstruction, one perforated with typhoid fever, and one found accidentally, that did not cause any symptoms.

Dr. Eisendrath, in closing the discussion, said that the experience of those who had spoken was very much the same as his own. The majority of these cases are not recognized before operation. He has had no experience with the Monihan method, but he can speak from personal experience with regard to the value of enterostomy. He has had three cases of intussusception in children. Two of them he lost in trying to do a resection. The children were not in any condition to stand resection. The third one was in just the same kind of condition. He did at first an enterostomy and later on a resection. He believes either enterostomy or cecostomy in these cases is indicated if we cannot do anything more radical.

Dr. Dean D. Lewis read a paper on "Multilocular Cysts of the Jaw."

CRAWFORD COUNTY.

The regular bi-monthly meeting of the Crawford County Medical Society was held in the Carnegie Library, Nov. 11, 1909, at 1:30 p. m. The meeting was called to order by the president, Dr. N. F. Lindsay, and the minutes of the previous meeting were read and adopted. The following members were present: Drs. Price, Cato, Firebaugh, Vanatta, Carlisle, Smith, Mitchell, Kirk, Midgett, T. N. Rafferty, Durham, Lindsay, Lowe, Jones, H. N. Rafferty and Meserve. The committee appointed at the last meeting concerning Dr. F. reported. The report was adopted and the committee discharged. A communication from Dr. E. W. Weis, containing a list of lecturers who have offered their services to lecture before the county societies, was read, and on motion the matter was laid on the table. A paper, "Report of Cases," was read by Dr. H. N. Rafferty. The report consisted of several interesting cases with which the doctor has come in contact in his private practice. After the discussion of the paper, on motion, the society adjourned.

A. Lyman Lowe, Secretary.

DOUGLAS COUNTY.

The Douglas County Medical Society held their regular quarterly session in the Knights of Pythias Hall, Thursday, Nov. 18, 1909. The president, I. W. Hall, of Camargo, presided. Other members present were: Drs. W. A. Wiseman, H. I. McNeil, F. T. McClain, W. C. McKinney, O. M. Slater, Charles V. Eads, W. E. Rice, John Ewing, W. S. Martin, F. W. Eskey, E. O. Little and W. C. Blaine.

The minutes of the last quarterly session were read and approved. The secretary-treasurer's report was read and received by the society. Dr. Little of Hume was accepted as a member by the Board of Censors on presentation of a card from the Marion County Medical Society, signed by its secretary of 1908, also recommendations of J. H. McCain of Arcola, provided he was recommended by the profession of his city. The following resolution was passed:

Resolved, That the Douglas County Medical Society extend to Dr. J. L. Reat its profound sympathy on account of the serious illness of his estimable wife.

Dr. J. L. Wiggins of East St. Louis, president of the Illinois State Medical Society, gave a very interesting talk on the subject, "Some Excusable Mistakes in Diagnosis." Dr. Wiggins was then asked to talk on "Medical Organization," after which the society voted him a vote of thanks.

The following officers were elected for the year 1910: President, Dr. John Ewing, Tuscola; vice-president, Dr. N. C. McKinney, Murdock; secretary-treasurer, W. C. Blaine, Tuscola; censors, W. A. Wiseman and I. W. Hall, both of Camargo, and W. E. Rice, Tuscola; medicolegal representative, W. E. Rice, Tuscola; medical legislative representative, Dr. Cyrus Rutherford, Newman.

The retiring president then appointed a committee consisting of Drs. H. I. McNeil, B. R. McClain and W. C. Blaine, to act in conjunction with the Tuscola Woman's Club in arousing interest in an antituberculosis meeting which is to be held in Tuscola, Jan. 7, 1910, at which a public address will be given by the president of the National Antituberculosis Association, Dr. Walter Metcalf of Chicago. Dr. N. C. McKinney then presented a case, for diagnosis, of ulcerated scar tissue following a burn some eight years previous. Dr. W. A. Wiseman of Camargo presented a case of sarcoma of the leg. There being no further business, the society adjourned to meet the first Thursday in January.

W. C. Blaine, Secretary-Treasurer.

THE FOX RIVER VALLEY MEDICAL ASSOCIATION.

The Fox River Valley Medical Association held its eighty-eighth semi-annual meeting in Aurora, November 9. The morning or surgical paper was presented by Dr. Cassius C. Rogers of Chicago, on "Diagnosis of Intracranial Surgical Diseases." The medical paper, in the afternoon, was "Meningeal Infections in Infancy and Childhood," by Dr. Samuel J. Walker, also of Chicago. Both gentlemen were made honorary members of the association and heartily thanked for their excellent papers. The annual election resulted in the election of the following officers for 1910: President, E. H. Abbott, Elgin; vice-president, C. H. Franz, Aurora; secretary-treasurer, Wm. H. Schwingel, Aurora; delegate, J. W. MacDonald, Aurora; alternate, F. H. Jenks, Elgin. The following committeemen were elected for three years: Board of censors, Wm. P. Sherman, Aurora; executive committee, F. H. Jenks, Elgin; A. A. Fitts, Batavia, to complete Dr. Read's unexpired term of two years; program committee, R. G. Scott, Geneva; necrology committee, J. A. Rutledge, Elgin. The following doctors were elected to memberships: Frederick Bauer, Dundee; Frank W. Griffith, Elgin; G. F. Ruppert, Elgin; Robert S. Denney, Aurora, and Carl P. Struve, South Elgin. Two members were received by card, C. D. Jones, from the Chicago society and A. R. Satterlee, from the society of Erie county, New York.

Geneva was designated as the next quarterly meeting place and the executive committee was instructed to select, if possible, some place in McHenry county for the mid-summer meeting. Geo. F. Allen, Secretary-Treasurer.

GREENE COUNTY.

The Greene County Medical Society held its quarterly meeting in the parlors of the Hotel Roodhouse, Friday, December 10, at Roodhouse, Ill. Dr. Burns of Whitehall, president of the society, called the meeting to order. The following officers were elected for 1910: President, Dr. A. W. Foreman, Whitehall; vice-president, Dr. H. W. Smith, Roodhouse; secretary and treasurer, Dr. H. A.

Chapin; censors, Drs. E. K. Shirley, E. H. Higbee and Howard Burns. Dr. Geo. N. Kreider of Springfield, editor of THE JOURNAL, read an excellent paper on "Appendicitis and Conditions Simulating Appendicitis." This paper brought forth conditions which may exist and that are not generally known. The paper was well received and discussed and very much appreciated. The society then adjourned for dinner, which was excellently served at the Hotel Roodhouse. Dr. C. R. Thomas then read a paper, "Bronchopneumonia." The paper was freely discussed and was highly complimented. Dr. A. W. Foreman of Whitehall gave a very interesting talk on "Malaria," relating his experience with this disease during his early practice. He questioned very much the assertion that malaria was always caused by the bite of the mosquito. The meeting was one of the best ever held by the society. Those present were. Drs. J. W. Adams, E. S. Gooch and Howard Burns of Carrollton; Drs. A. W. Foreman, E. K. Shirley, H. W. Chapman, F. N. McLaren and G. W. Burns of Whitehall; Drs. L. O. Hamilton, H. W. Smith, E. H. Higbee, W. L. Kincaid and C. R. Thomas of Roodhouse, and Dr. Geo. N. Kreider of Springfield. The society adjourned to meet next March at Whitehall.

JACKSON COUNTY.

The fourth quarterly meeting of the Jackson County Medical Society was held in the parlors of the Jackson Club, in Springfield, Dec. 16, 1909. Those present were Drs. Ormsby, Roth, Sabine, Carter, Molz, Grizzell and Essick of Murphysboro; Drs. Mitchell, Etherton and Neber of Carbondale, and Dr. Horstman of Vergennes. Visitors: Drs. Lightfoot of Carbondale, Galbraith of Clifford, and Bartlett of St. Louis. Dr. Etherton of Carbondale notified us that Phemister was still doing illegal vending in Carbondale, despite the fact that the secretary had informed Dr. Egan in September of his practices. The secretary was instructed to again write Dr. Egan of this matter. The application of Dr. H. M. Daniel of this city was read and the same given to the board of censors for three months' consideration. Dr. Earnest Neber of Carbondale was declared a member, his application having been presented in September. It was moved by Dr. Mitchell and seconded by Dr. Neber, both of Carbondale, that the next meeting be held in that city. Carried. The following officers were elected for the ensuing year: President, Dr. A. R. Carter; vice-president, Dr. C. C. Grizzell; secretary-treasurer, Dr. Ray B. Essick; censor, Dr. H. H. Roth; delegate, Dr. C. O. Molz; alternate, Dr. R. S. Sabine.

Program: A case of "Suspected Goiter," presented by Dr. Horstman of Vergennes. The case was examined by all present and the discussion opened by Dr. Willard of St. Louis. A case of "Progressive Spastic Paraplegia" and also a case of "Epithelioma of the Ear," presented by Dr. Molz of Murphysboro. A case of "Exophthalmic Goiter," presented by Dr. Sabine of Murphysboro. Dr. Willard Bartlett of St. Louis read a very interesting paper on "The Surgical Treatment of Exophthalmic Goiter," in which he gave numerous precautions to be taken both in the operation and after-treatment. Later Dr. Bartlett extended an invitation to the physicians to witness a nephrectomy at his hands in St. Andrew's Hospital. Quite a number of the gentlemen attended and enjoyed the instruction.

RAY B. ESSICK, Secretary-Treasurer.

JEFFERSON COUNTY.

At the October meeting of the Jefferson County Medical Society it was decided to invite the school board, teachers in the public schools, city council and the general public to an open meeting of the society on Thursday, November 18, at 7:30 p. m., for the discussion of "school sanitation."

This meeting was called to order at the time set by the president of the society, Dr. J. T. Whitlock, at the Elks Hall, Mt. Vernon, with 125 persons, representing the school board, teachers, city officials, ministry and the medical profession,

present. After the minutes of the last session had been read and approved the society enjoyed the following program: "The Physical Condition of Mt. Vernon School Children," Dr. J. W. Hamilton. Dr. Hamilton, as president of the school board, had handed a list of the following questions to each teacher: 1. Number enrolled. 2. Number appearing healthy. 3. Thin and poorly nourished. 4. Having cough. 5. Noticeable mouth breathers. 6. Defective eyes of any kind. 7. Nasal twang to speech. 8. Extremely sluggish. 9. Defective teeth. 10. Sent home for sickness each month. 11. Number of contagious diseases. 12. Cubic feet of air to each pupil. Dr. Hamilton reported the conditions by grades, and the grand total, which is as follows: Number enrolled, 1,609. Healthy, 931. Thin and poorly nourished, 243. Cough, 135. Mouth breathers, 170. Defective eyes, 308. Nasal twang, 160. Extremely sluggish, 187. Defective teeth, 731. Sent home for sickness, 77. Cubic feet of air to each pupil, 218. These figures were, of course, taken from the untrained observation of the individual teacher and would probably be increased if these children could be examined by a trained observer.

"Defective Visiòn in School Children," by Dr. George Tupper, was the next paper on the program. Dr. Tupper took up the various conditions that are common among this class of patients and told how they might be recognized and what should be done to change them.

"Preventive Medicine," by Dr. Andy Hall, was next on the program. Dr. Hall dealt largely with quarantine and disinfection as they exist in this community at the present time and in a way which all present could understand explained the great harm that comes to children suffering from adenoids and advised examination and treatment of all suspected cases.

These papers were read and discussed together. Many representative men and women took part in a free discussion and the society feels that a step has been taken in the right direction. The original cause for this open meeting came before the society during the discussion of a paper entitled "The Symptoms and Treatment of Scarlet Fever," which was read by Dr. Andy Hall in the October meeting. At that time the very lax condition of quarantine and disinfection which prevails in Mt. Vernon at the present time was freely discussed and led to the appointment of a committee of five to confer with the mayor of the city to devise some means whereby these conditions can be made adequate. This committee will meet in a short time and the medical profession of this community is satisfied that there will be a radical change made in the near future.

The meeting on the 18th was a success in every way, and we feel that untold good will come from the efforts of the profession to educate the public. This is only a beginning, however, and from time to time the public will be invited to meet with their medical advisors for the discussion of subjects that are vital to the well being of the vicinity. W. H. Gilmore, M.D., Secretary.

LAKE COUNTY.

The meeting of the Lake County Medical Society was held at the Gables, Waukegan, Nov. 8, 1909. A report of correspondence concerning the Osteopathic Bill was read. The following program was given: "A Report of Two Cases," by Dr. J. C. Foley, of Waukegan. One was a case of papilloma that had been diagnosed as pregnancy; the other, complete obstruction of the bowel by Meckel's diverticulum becoming adherent following an operation for appendicitis and causing a twisting and finally acute angle of the bowel which resulted in obstruction. The case was reopened, diverticulum was released from its adhesions and the case recovered.

"Modern Repair of Cervix and Perineum," by Dr. F. L. Gourley, of Waukegan; a most carefully prepared paper which was supplemented by demonstrations with putty and blackboard drawings which gave not only plain demonstrations of the methods of the best authors but also his choice of methods with reasons for same. The paper was discussed by Drs. Tombaugh, Foley and Gavin.

"My Impressions of European Hospitals," by Dr. Elva A. Wright, of Lake Forest. Most valuable information was given, especially to those anticipating postgraduate work in Europe. The hospitals of England were especially commended but the hospitals of America far excel those of Europe not only in their modernness but also in their management.

"Water and Sewage Supply of Lake Shore Lake County Towns," by Dr. W. C. Bouton, of Waukegan. This paper will be of great value because of its data to those who have in charge the correction of errors along this line in this community.

Dr. Beatrice Pearce Dickinson, of Sulzer, Alaska, then told us of her work in the icy north and showed many photographs to illustrate her talk. A special vote of thanks was given to those who took part in the program, and it was suggested by the president that Dr. Bouton's paper be at least extracted if not printed in full in the local papers. Those present were: Drs. Taylor, Tombaugh, Kalowsky, Gavin, Beatrice Pearce Dickinson, Bouton, Gourley, Bellows, Fuller, Churchill, Elva Wright, Watterson, Hageman, Roberts, Foley and Grant.

W. H. WATTERSON, Secretary.

LAWRENCE COUNTY.

The Lawrence County Medical Society held their annual meeting in the Masonic Hall in Bridgeport, Monday, December 6, at 2 p. m. The following members were present: Drs. Bryant, Lewis, Trueblood, Gore, Funk, Gordon of Lawrenceville, McMurray of St. Francisville, Hockman, Green and Gideon of Sumner, Petty of Chauncey, Montgomery of Birds, and Thompson, Schrader, Lewis, Kell and McAdoo of Bridgeport. Visiting physicians: Dr. Newcomb of Champaign, Drs. McCoy and Schmadel of Vincennes, Dr. Weber of Olney and Dr. Hill of California. The following papers were read and discussed at this meeting: "Early Diagnosis of Appendicitis and Technique of Operation," Dr. W. L. Gray of Champaign. "The Emergency Operation for Appendicitis and the Preparation for Same," Dr. W. K. Newcomb of Champaign. These papers were both interesting and instructive and brought out considerable discussion from Drs. Bryant, McMurray, Weber, Gore and Schmadel, and the discussion was closed by Dr. Newcomb. Dr. McCoy then presented his paper, "A Consideration of Cutaneous Carcinoma; Report of Case, with Photograph." This was an interesting paper and highly appreciated. A vote of thanks was extended to the visiting physicians for their excellent papers. This being our annual meeting, the following officers were elected: Dr. J. B. Bryant of Lawrenceville, president; Dr. J. F. Schrader of Bridgeport, vice-president; Dr. James Emmons of Pinkstaff, secretary-treasurer; Drs. B. F. Hockmon and H. V. Lewis, censors. The following applications were favorably received for membership: Drs. W. L. Kell and C. P. McAdoo of Bridgeport, Dr. W. I. Green of Sumner, and Drs. V. A. Funk and R. L. Gordan of Lawrenceville. The meeting then adjourned to meet at Lawrenceville the first Monday in March, 1910. After adjournment the Bridgeport physicians and their wives tendered a banquet to the visiting physicians and their wives.

C. M. LEWIS, Secretary.

LIVINGSTON COUNTY.

The eighteenth semi-annual meeting of the Livingston County Medical Society was held in the Dominy Memorial Library, Fairbury, on November 4. Twenty-five members were present and Dr. Collins, of Peoria, and Dr. Adams, of Gridley, were visitors. The four essayists were present and their subjects were fully discussed. G. T. Carson, of Chatsworth, read a paper on "Appendicitis," which was carefully prepared and showed that the doctor had spent considerable time upon the paper. Although an old subject so many good points were brought out that a most interesting discussion followed. C. U. Collins, of Peoria, read a paper on "Fractures of the Hip," and illustrated it with numerous drawings. He gave

several points upon the diagnosis of this common fracture and upon its treatment that were new to the medical men present. A. B. Middleton, of Pontiac, read a paper on "Failing Vision" which treated of this affection as secondary to many common diseases and urged the medical men to not always try to correct failing vision with glasses, but to look for the real cause in some of the vital organs of the body. L. P. Kuhn, of Fairbury, read a paper on "Hemorrhagic Erosions of the Alimentary Canal, Simulating Gastric Ulcer." This subject was well handled, and the difficulty confronted in the diagnosis of diseases of the stomach clearly defined. The physicians of Fairbury and neighboring towns tendered to the visitors a six o'clock dinner that upheld the reputation which they established at the previous meeting of this society in Fairbury. Dr. Middleton, acting as toastmaster, called upon Drs. Lewis, Carson, Collins, Ross, Barnhizer, Brewer, Adams, and Balke, who responded, thus ending one of the best meetings that this society has ever held.

JOHN ROSS, Secretary.

FAILING VISION AS A SECONDARY TROUBLE.

A. B. MIDDLETON, M.D., PONTIAC, ILL.

The subject I am about to consider at this time is a symptom that should interest the general practitioner more than any one else, because, as a rule, he is the first to be brought face to face with people suffering with this trouble. Early recognition of any pathologic condition that is causing the failure in vision is a very valuable one for the benefit of the patient's future eyesight, and the doctor's welfare, because if the cause is not discovered early and properly treated, many a patient might finish his days in partial or total blindness.

An examination of the interior of the eye makes it possible to investigate and study the condition of blood-vessels and nerves, which in the rest of the body are exposed only by surgical manipulation, while here they are unveiled before us and we are allowed to profit by their minutest variations. I might say in the beginning that the ophthalmoscope is fast becoming an indispensable aid in diagnosis, especially in general medicine, since there are so many internal and constitutional disorders, producing characteristic fundus changes many times long before other symptoms develop or are even suspected.

Science within the past few years has made very rapid progress and has taken wide strides in all of its many sections. The science of optics, a short time ago, was no more in demand than physics; the elements of each, as you know, are very similar. It has now, however, become a separate and distinct science, and there are many things in it to be considered of far greater value and importance than simply correcting errors in refraction with glasses taken from a trial case. A thorough knowledge of the eye in every part and particular is absolutely necessary in order to make a careful and an intelligent ocular examination, during which every part should be put through reliable and effectual tests.

It has not been long since the minute structure of the human eye, its embryology, pathology and motor power, with all of the many other parts, were only studied by a few who were fond of research work. It is to the hard work and patient study of these students that we are so much indebted for certain facts and the greater part of our present knowledge of physiologic optics and scientific ophthalmology.

Formerly most people with a slowly or even a rapidly failing vision were often looked upon, even by many medical men, as cases suffering with nothing more than a simple error in refraction, especially if they were forty years of age or older. They were often told that their trouble was simply old age and all that was required was a pair of glasses. The errors in refraction, if any, were corrected subjectively by the application of lenses taken from a trial case, and the glasses that would appear to give the best improvement in vision were ordered, the patient dismissed, and forgotten. Very seldom, if ever, was an interocular examination made in these cases.

I am glad to say things have changed. For an oculist of this day and age to practice ophthalmology along these slipshod, careless lines should be considered as criminal and inexcusable as it would for a surgeon to do a laparotomy with the same technique, environment, surgical preparation and precaution that were used in such cases forty years ago. You know well that a laparotomy performed at the present day under such conditions as were used in those days would mean most certain death to the patient. The same holds true with the old methods of examining the eyes of patients with no other symptom than simply failing vision.

Many eyes that are thought to be losing their sight owing to some refractive error might have a very serious trouble overlooked unless a perfect routine interocular examination is made and followed in every case. If a proper examination is not carried out some of your patients will eventually come to the same sad end as the laparotomy case, with this exception, instead of losing his life he might continue to lose his sight later, ending in total blindness, which is a twin brother to death. It goes without saying that an ophthalmoscopic record should be kept in every eye case, so that in the future reference might be made and facts learned which will be of great value in treating and advising these same people in years to come.

My time is too short to enter into a discussion on such an extensive subject as this, therefore I will pass on and show you a few water-color sketches that I have painted personally from the fundus of cases referred to me as simple cases of refraction. Most of these interocular changes would have been overlooked had it not been for a regular routine examination. These patients all had practically the same story, which was in substance: "My eyes are growing dim of late. I have gotten glasses from several places. They all appeared to help me at first, but in a short time they would not fit any more, and now I find myself just as bad as I was in the first place."

I see several doctors present who will recognize some of these pictures that I am about to pass among you as duplicate drawings of fundi that I have made for you from patients you have referred to me, therefore I hope in the discussion of this paper you will feel free to bring out the facts and points in your particular cases so that we may all profit by your experience. Some of these sketches were taken from people who did not come to me in my practice. I made them while I was locum third house surgeon in Moorfields Eye Hospital in London, England. True, they are rare cases, but, nevertheless, cases of this kind might present themselves at any time and we should be prepared to know them when they come.

There are so many interocular diseases that cause failing vision as their first symptom that I will not attempt to describe any one in full but will in the short time alloted touch lightly on a few of the most common by subject only.

These first pictures I hand you were made from cases of chorioiditis. There are nearly as many forms of this disease as there are cases, as no two cases are exactly alike. While, on the other hand, we are able to group them into classes by means of certain characteristics that are always present in certain forms of this trouble, I cannot describe or attempt to discuss such a broad subject as this in the few minutes I have at my disposal, but I must mention a few of the facts found in these cases.

Chorioiditis is one of the most common troubles we have to deal with that has as its first and most marked symptom a gradual failure in vision without pain or any external signs. I might say, in passing, that the chorioid is the main vascular supply to the vitreous portion of the eye as well as a partial supply to the retina. There is an absence of sensory nerves in the chorioid, therefore disturbances here are not accompanied by pain and an inflammation in the chorioid might become very extensive before we are given any warning of serious trouble. Its presence is found only by a careful ophthalmoscopic examination of the fundus, otherwise the patient might go on to blindness before he is aware of anything serious being wrong with his eyes.

There are cases of chorioiditis, however, where the inflammation comes forward in the uvea involving the ciliary body and iris. When the disease follows such a course it soon becomes very painful, due to a disturbance of the sensory nerve

terminals which are present in the iris and ciliary body. The cause of the disturbance of vision in chorioiditis is due to the inflammatory exudate accumulating in the chorioid which raises the retina, thus dsturbing it from its normal position which makes things appear distorted, illuminated, enlarged or smaller, which symptoms are better known as micropsia, macropsia, photopsia, etc. Later the exudate becomes absorbed, the chorioidal vessels atrophy or cicatrize; the retina over these places is involved and caught up in the scar, the retinal function being destroyed due to its having been displaced and deprived of its proper nourishment. These areas of atrophy many times account for the small positive scotoma we often find in taking fields of vision. I have one or two fields here to-day attached to a drawing of the same eye which shows nicely the positive scotoma and its relative relation to the patch of chorioiditis, in the fundus. You will see a short history attached to these sketches which will fully explain each case to you.

I now hand you a series of albuminuria cases beginning with one made about the very earliest we ever get to see a case and ending with one I made only one day before the patient died from the effects of his albuminuria. The albuminuria causes these changes in the vascular portion of the eye. The changes are exactly the same as changes caused by brain tumor, diabetes, or arteriosclerosis. The only means of differential diagnosis is the examination of the urine, which should be made in every eye case. The form of kidney disease resulting in albuminuric retinitis is most always the atrophic kidney. The severity of the retinitis bears no fixed proportion to the intensity of the kidney trouble nor to the amount of albumin in the urine. Albumin amaurosis or blindness in these cases is due to the poisoning and destruction of the centers of sight in the brain and not by the retinitis, because vision loss due to the retinitis is always slow. The field becomes smaller and smaller. There are periods of blindness followed by fair vision, and such actions continue on, while vision once lost due to brain poisoning positively never returns.

I show you a series of diabetic cases. Also these cases in many ways resemble albumin cases in the arrangement of the hemorrhages around the macula, yet they do not take on such a perfect stellate arrangement as in albumin retinitis. The disk is seldom altered and there are many punctate extravasations of blood between the white patches. These cases cannot be positively diagnosed either without making an anlysis.

I hand you some heart cases, also, to show you what may be expected in arteriosclerosis, hypertrophied heart, valvular disease, embolism, thrombosis, and many other vascular changes.

M'LEAN COUNTY.

At the October 7 meeting Drs. Mark C. Jones and J. Haskell Collins were admitted to membership; Drs. Frank P. Boyd, of Bloomington, and Walter G. De Tour, of Chenoa, were proposed, and referred to Board of Censors. On motion of Dr. F. C. Vandervoort, the Secretary was instructed to write a letter expressing appreciation and confidence to Dr. Cook, the discoverer of the North Pole.

The paper of the evening was by Dr. W. A. Balcke on

"THE DEMEANOR OF THE OBSTETRICIAN IN THE PRESENCE OF THE PATIENT."

In discussing the phases of obstetrical practice, a division may be made in the accomplishments of the obstetrician. On the one hand, he must possess a knowledge, which plays a part only in the guidance of his judgment as an operator. He must possess a fine knowledge of all anatomical parts involved in labor of both mother and fetus. He must be well acquainted with the actions of a normal labor, and must understand the working strength of all parts of a female body.

In short, he must possess a knowledge not shown to the patient, which is an ever guiding factor in the work of an accomplished accoucheur. On the other hand, he must possess a knowledge of the things to command for the good of his patient, and possess a working skill amply sufficient for the needs of obstetrical cases, for the patient and nurse await the immediate exercise of this knowledge and skill. Simply stated, the division is, the things he must know for himself to complete the work, and the things he must do in the presence of the patient. This latter division falls especially within the province of this paper.

The student of obstetrics is advised to possess himself of ample data concerning patient's condition during the months of pregnancy, to make repeated urinalyses, at least once every thirty days, etc. The value of such data is common knowledge with every practitioner, but to gain such in many cases is practically impossible. The physician's first intimation of such cases is often a call to attend a case in full labor. Much can be done by physicians in educating the people to the needs of such cases.

But to have a starting point we will follow the doctor at his call to deliver his patient. We will not question his quiet, unassuming entrance into the presence of his patient, his reassurance in bidding her a pleasant day, and his casual, though guarded conversation. These things are expected from a gentlemanly practitioner. A hurried entrance, unguarded speech, hasty removal of coat and cuffs in preparation of a first examination not yet timely, are certainly not good form. He should, soon after coming, according to the urgency of the case, ask to have preparations made for an examination and should prepare himself accordingly. He should first, however, tactfully gain consent of his patient to do so. To consider his prerogative to do so when he pleases may shock delicate womanhood and not result in confiding respect. In his own preparation the physician should observe a few simple regulations. He should remove coat, vest and cuffs, and should roll his sleeves well above the elbows. He should wear a surgical gown, should scrub his hands with soap and brush, and later use a good antiseptic solution on hands. Asepsis is well in surgery but antisepsis in general obstetrical practice.

Previous preparation of patient in the country is often impossible. If possible bowels and bladder should be empty. Antiseptic douches are of no special value prior to delivery, as the ordinary syringe douche does not render the vaginal tract sterile. When a previous antiseptic douche is indicated, the operator should perform the same by inserting index and second finger, the patient's thighs well flexed, while the nurse pours the solution into the opened parts from an open mouthed vessel. During the copious flow of the solution, the fingers should open all vaginal folds and cleanse them thoroughly.

Examination of patient. Abdominal palpation should precede vaginal examination and the following points observed: The contour of the abdomen. The presence of quickening. The location of fetal head, if outlined. Also whether the abdominal enlargement is receding from the region of the stomach. From vaginal examination the following should be observed: Local temperature. Condition of the lower bowel. Dilatation of the os uteri. The general presentation of the fetus and in primipara the relative size of the pelvis. If fetal head is not engaged, the patient is instructed to wait, preferably out of bed. With the advent of regular pains, with dilating os and head firmly engaged, the patient should be put to bed and the operator should be fully prepared for his duties. The patient should be in the prone position, with knees slightly elevated and arms to the sides. The side position or knee chest position should never be used unless especially indicated. What advantages such positions may possess for the patient are offset by disadvantages to the operator. The position of a woman in labor, assisted by a skilled accoucheur, should be on the back.

Much is said of too much vaginal interference. But the careful operator does not carry infection farther, if he carries it at all, from his tenth examination than from his first.

When the child is cleansed the umbilicus should be well oiled and cotton applied, folding the wadding under and over stump as it is drawn upwards over the abdomen. The writer does not favor the dry, umbilical dressing. After delivery of the child the operator should place his left hand over the uterus until the hard uterine wall can be felt. After a few moments of rest Credé's method of placental removal should always first be tried. The expelling contractions should generally be induced and not awaited. After the placenta is removed the operator's left hand should again rest on the abdomen over the uterus until it is well contracted and all danger of hemorrhage has passed. A well contracted uterus free from placental tissue will rarely cause excessive hemorrhage. The expelled placenta should be carefully examined. In some provinces of Germany physicians are required by law to keep the placenta in a solution for a period of time to prove its complete removal in case fever develops. Many physicians do not examine a placenta at all.

During the violent stages of labor many physicians give chloroform. This should not be general practice and when necessary great care should be exercised. It should be remembered that partial anesthesia is more conducive to cardiac failure under heavy strain than more complete anesthesia. A patient awake and mindful of her duty and responsibility can render valuable aid to the physician and often keep her tissues intact when otherwise they would be injured. Better no anesthetic when it can be avoided. The use of forceps to aid delivery should always be preceded by a sufficient cause. During instrumental delivery always remove forceps before face emerges from the perineum. Short, so-called quick delivery forceps should not be a part of a physician's equipment. A binder for the mother is a thing obsolete except for special indications.

Dr. Brown led the discussion. He differs from Dr. Balcke in that he uses chloroform in all cases unless patient objects. Also uses rubber gloves, and clean cloths or towels over band in supporting perineum. Dr. Bath followed discussion. He uses extension of limbs in latter part of labor, even having patient's limbs on the floor. It increases diameter of pelvis and relaxation of perineum. Dr. Hawks uses Sims' position in primipara. Dr. Sloan uses catgut in tears of perineum suturing vaginal membrane, leaving skin open for drainage.

General discussion followed.

MADISON COUNTY.

The annual meeting of the Madison County Medical Society was held in Alton, Ill., on the afternoon of December 3, and it was a rouser, nearly one-half of the entire membership of the county being present. Dr. S. T. Robinson presided and introduced our District Councilor, Dr. Carl E. Black of Jacksonville, who spoke on several important state matters and then presented a paper on "Fractures of the Spine," well illustrated by *x*-ray plates and photographs. Dr. Black is a great favorite with this society and his annual visit is anticipated with great pleasure.

Dr. F. W. Kerchner of Glen Carbon was admitted to membership by transfer card from the St. Clair County (Illinois) Medical Society, and Dr. W. C. Richman of Maryville was admitted to membership by application, the board of censors' report being favorable. The application of Dr. Chas. A. Moore was read and referred to the board of censors.

A resolution adopted by the American Medical Association, recommending one or more open sessions a year to which the general public is to be invited, was read and referred to a committee consisting of Drs. Pfeiffenberger, Burroughs and Ferguson, with instructions to report at the next meeting. The annual reports of the secretary and treasurer were read, and on report of the auditing committee approved and the secretary ordered to publish a financial statement and send a copy to each member. The annual election resulted as follows: President, Dr. G. Taphorn, Alton; vice-president, Dr. W. H. C. Smith, Godfrey; secretary, Dr. E. W. Fiegenbaum, Edwardsville; treasurer, Dr. J. H. Fiegenbaum, Alton; member of board of censors to serve three years, Dr. S. T. Robinson, Edwardsville. Those

present were Drs. Foulds, Pfeiffenberger, Ferguson, Threadgill, H. R. Lemen, Robinson, Wahl, Tulley, Sims, Earley, Kiser, Smith, Zoller, H. W. Davis, Schreifels, Yerkes, Fisher, Beard, G. K. Worden, Hastings, J. H. Fiegenbaum, Burroughs, Ihne, Moore, Cook, Johnson, Nina P. Merritt, Joesting, Wilkinson, Taphorn and E. W. Fiegenbaum. Adjourned to meet in regular session on the first Friday in March, 1910.

E. W. FIEGENBAUM, Secretary.

MORGAN COUNTY.

The Morgan County Medical Society met at the Library, Jacksonville, Thursday, November 11, 1909, at 8 p. m. Those present were Drs. Baker, Black, G. R. Bradley, G. W. Bradley, Campbell, Day, Dewey, Milligan, Hairgrove, Ogram, Reid, Stacy, Treadway and Woltman. Dr. J. W. Hairgrove acted as chairman in the absence of the president, Dr. C. E. Cole. The librarian, Dr. Carl E. Black, reported three substantial gifts to the library from Dr. Norbury and Dr. Abraham Jacobi. Dr. Walter L. Treadway, of Concord, was elected to membership. Dr. A. J. Ogram read a paper on "General Diagnosis," which laid special stress on the importance of thoroughness of examination as the only proper foundation for a clinical training of high character. Dr. E. F. Baker reviewed the history and present status of "Pellagra" as outlined by several of the leading authorities on the subject. This résumé brought forth quite a discussion by the members. Dr. G. R. Bradley reported a case of hepatic carcinoma.

GEORGE M. STACY, M.D., Secretary.

OGLE COUNTY.

The fourth quarterly meeting of the Ogle County Medical Society was held in the Supervisor's Room in the Court House at Oregon, Ill., Oct. 27, 1909. The meeting was called to order at 2 p. m. by President Beveridge. The minutes of the previous meeting were read by the secretary and approved. Roll call found the following members present: Drs. Alrutz, Beard, Beveridge, Hanes, Kretsinger, C. E. Powell, C. F. Powell, Replogle, Sheets and Schneider. Visitors present were Drs. Le Sage, Law and Murphy of Dixon, Dr. Stealy of Freeport and Dr. Cottlaw of Oregon.

Dr. H. A. Brennecke of Aurora read an interesting paper on this important subject, "Extrauterine Pregnancy." This paper was thoroughly discussed by Drs. Alrutz, Beard, Murphy and Stealy. Dr. D. A. Vanderhoof of Rockford, a former member of the society, read a paper on "The Tonsil," giving pathology, diagnosis and various methods of removing the tonsil. The discussion was opened by Dr. Le Sage of Dixon. The Doctor being a throat specialist, his discussion of the subject was interesting to all members present. The subject was further discussed by Drs. Alrutz, Beard, Brennecke, Murphy and Stealy. Drs. Stealy and Murphy were emphatic in condemning the use of chloroform as a general anesthetic. Dr. Stealy also condemned the use of Monsel's solution used as hemostatic under any consideration.

Dr. T. F. Alrutz, located at Oregon, who presented a letter from the Chicago Medical Society stating that he was a member in good standing, and Dr. C. F. Powell of Forreston were voted in as members of the society. The secretary was instructed to pay all bills. The next regular meeting will be held in Polo. The president appointed Drs. Powell and Maxwell to act as a committee on program for the next meeting. Adjourned to meet at Polo the third Wednesday in January, 1910.

DR. J. T. KRETSINGER, Secretary.

PERRY COUNTY.

The Perry County Medical Society met at Pinckneyville November 12, with Dr. J. S. Cleland, President, in the chair, and Drs. Templeton, D. O. Mead, and Gillis present. Dr. T. H. Roe, who was Secretary, having removed from the State, Dr. Gillis was elected to fill the unexpired term as Secretary.

After disposition of routine business cases of fracture of the femur were reported by Drs. Templeton and Mead and elicited a spirited general discussion of fractures. Dr. Gillis reported a number of cases of eye injury in coal mines which, though trifling in appearance, produced a rapid destruction of the eye. Dr. Templeton of Pinckneyville reported a case of infection of Skene's glands which was interesting and instructive.

Correspondence from the Bureau of Medical Education of the American Medical Association was read by the secretary and the subject of an open meeting of this society was discussed but no definite action taken. The Society then adjourned to meet at Pinckneyville, December 9, 1909.

J. S. Cleland, M.D., S. Warwick, President.
F. P. Gillis, M.D., Du Quoin, Secretary.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society met at the New Harper, Rock Island, Dec. 14, 1909. After dinner the literary program was taken up as follows: Paper, "Pellagra," by Dr. M. J. O'Hevre; paper, "The Present Relation of Bovine Tuberculosis to Public Health," by Dr. A. H. Mueller. After this paper the following resolution was passed, after a careful survey of the subject by the society:

Resolved, That the Rock Island County Medical Society is opposed to the stand taken by Dr. James Egan, particularly on account of his position as secretary of the State Board of Health, and in the state medical society, relative to the non-communicability of bovine tuberculosis to man. At the present time this has not been positively proven, and because the communicability has been proven to the satisfaction of the vast majority of the medical profession, such propaganda may do endless harm and can do no good.

A committee was appointed to investigate the establishment of a county medical library. The society then adjourned. Twenty members were present at the meeting.

W. D. Snively, M.D., Secretary.

RICHLAND COUNTY.

The Richland County Medical Society held a meeting in the council chamber at Olney, December 16, at 2 p. m., with the president, Dr. W. E. Fritchie, in the chair. The minutes of the last meeting were read and approved. The following officers were elected for 1910: President, Dr. E. H. Horner, Olney, Ill.; vice-president, Dr. G. S. Trotter, Dundas, Ill.; secretary and treasurer, Dr. Frank J. Weber, Olney, Ill.; medicolegal representative, Dr. A. T. Telford, Olney, Ill. Following the election of officers a general discussion of pelvic infections was taken up.

Dr. Frank J. Weber, Secretary.

SANGAMON COUNTY.

The tenth annual meeting and banquet of the Sangamon County Medical Society was held at the Leland Hotel, Springfield, Nov. 8, 1909. Ninety-seven members of the society and guests sat down to an elaborate spread which had been prepared and were afterward addressed by Dr. Henry T. Byford, of Chicago, who spoke on "The General Practitioner and the Specialist," and by Hon. Wm. A. Northcott, who spoke on "The Lawyer and the Doctor." The committee on arrangements was composed of Drs. Bocock, Nelson and Palmer. Dr. Walter Ryan presided as toastmaster. The election usually held on this night will be held at the January meeting, when ample time can be given to the consideration of this important matter.

Geo. T. Palmer, M.D., Secretary.

UNION COUNTY.

The regular monthly meeting of the Union County Medical Society was held in the Science Room of Benton Hall, Union Academy, Anna, Ill., at 2:30 p. m., Wednesday, Nov. 24, 1909. The following members were present: Drs. J. J. Lence, W. E. Lingle, T. J. Rich, A. J. Lyerle, F. W. Willard, S. C. Martin, E. Cohn, Karl Sanders, J. C. Stewart and E. V. Hale, and two visiting physicians, Drs. E. L. Abbott and L. D. Smith.

President W. E. Lingle called the meeting to order and the above members responded to roll call. The minutes of the previous meeting were read and approved. Dr. J. C. Stewart read an excellent paper on "Diphtheria," which was discussed by all members present. Dr. Sanders reported a case of "Acute Anterior Poliomyelitis," which brought out some discussion. Dr. Cohn reported a very bad case of retrotonsillar abscess.

Adjourned.

E. V. Hale, Secretary.

WABASH COUNTY.

The Wabash County Medical Society held a regular meeting in Mt. Carmel November 1, at Dr. Maxwell's office in the Schneck Building, at 3 p. m., with a good attendance. Dr. Edwin H. Lescher read an able and instructive paper on "Typhoid Fever," with special reference to diagnosis and treatment. Dr. S. W. Schneck read a paper on "Emergency Surgery," which was well received and interesting and well deserves publication. The following officers were elected for the ensuing year: President, Dr. C. E. Gilliott, Allendale; vice-president, Dr. S. W. Schneck, Mt. Carmel; secretary, Dr. J. B. Maxwell, Mt. Carmel; treasurer, Dr. E. H. Lescher, Mt. Carmel; censor, Dr. W. H. Robinson, Mt. Carmel.

J. B. Maxwell, Secretary.

THE SURGICAL TREATMENT OF EMERGENCY CASES.

S. W. Schneck, M.D., Mt. Carmel:—In the discussion of the questions before us, we are opening up a point in minor surgery but of major importance. In the treatment and dressing of emergency surgical cases we undertake:

1. To limit the injury; to do no more harm to our patient than it has done.

2. To repair as nearly as possible the injured part; bearing in mind that the first is the more important duty of the two. There are three salient factors in equipment for doing this work and we will discuss them separately: mental preparation, surgical equipment, and antiseptic technique.

1. Mental preparation: We cannot all be Senns, Ochsners or Mayos. We do not have the preparation, equipment or experience to make us such, but we can do clean, careful work in the most insignificant class of injury or we can be dirty and careless in everything we handle from the gravest case down to the care of our offices and even our own persons, so that we are a menace to whomsoever is unfortunate enough to live in the same community. The victim of accident does not always have a choice in selection of his surgeon, and often the call is answered by a physician who does not consider himself any part of a surgeon, or still more unfortunately does consider himself as such, when he is not. Any man who announces himself to the public as a surgeon should have a reasonable knowledge of anatomy, anesthesia, operative surgery and aseptic technique.

2. Surgical equipment: Any man who answers a call to a surgical case, or receives one in his office, should never have to admit that he could have done better had he been better equipped with some commonplace instrument, or dressing. This is not a matter of neglect, it is nothing short of criminal. The use of unsterilized dressings and instruments are the cause of at least one-third of the infections. The other two-thirds are due to the use of strong antiseptics, which coagulate the albumen on raw surfaces and form a breeding ground for infections. Use thorough flushings with hot normal saline or boric acid solution. Boil all instruments both before and after using. You cannot sterilize instruments by looking wise or with hot air. You must have some way of getting hot water

quickly and should always have a receptacle of cold sterilized water plugged up dust proof to cool your hot water. Sterile bandages, cotton and gauze are cheap and always needed. This does not mean a roll of cotton with the paper torn off and which has rolled over the floor and been handled with hands covered with pus after treating an infection of some sort. By all means have a couple of rolls of zinc oxid adhesive plaster. It is being used more and more every day to immobilize strained joints, fractured ribs and clavicles and to hold other dressings in place; besides, the patient rarely ever attempts to remove them, especially if the plaster is of a good adhesive sort. Do not fail to have several plaster of Paris bandages on hand, for you will need them some time and, the chances are, will want them very badly when you do. Safety pins, straight pins, a small rope and pulley and an assortment of thin boards of various lengths are good friends in time of need. Chloroform, ether, carbolic acid, boric acid, collodion, alcohol, glycerin and bichlorid of mercury cannot be dispensed with in any emergency bag, much less in the office.

In the matter of instruments, we must be prepared to stop hemorrhage and to resuscitate an exsanguinated patient; so have your hypodermic case, a tourniquet or rubber bandage, fountain syringe and a large needle suitable to give a saline infusion. Do not buy too many knives; you can cut a leg off with a one and one-half inch knife, and saws; but be sure to have a trephine and a De Vilbiss skull cutting forceps and at least one good bone nipper. Often after arriving on the scene of action the careless surgeon has some willing fool half kill a horse going back to town for needles and proper sutures. That is certainly bad form, and he alone is to blame for not putting them in his case and leaving them there. (That happened to me once, but only once.) This whole equipment does not cost over $30 or $35, excepting a few blankets, which you might borrow from home; but be sure and get them to the office some way or other with an abundance of clean sterilized towels and a few pieces of muslin, one yard square, for slings. By the way, you can bandage any portion of the body with a 36-inch triangular bandage, if you only take the time to find out how it is done. Everyone here can find something to add to this list which is indispensable to him, but no one can afford for one day not to have everything mentioned.

3. The antiseptic technique: Surgery, and especially emergency surgery, is in a great measure successful or a failure, other things being equal, whether or not the case develops an infection of bacterial germs, and this section of our discussion with few sentences excepted may sound like a succession of dont's, because by not committing some common errors we may eliminate the greatest number of infections. Remember that the skin in a large number of patients contains bacteria which infect wounds, but do not cause any symptoms in the unbroken skin, or mucous membrane. Here is where we get our recurrent cases of erysipelas. So do not think a douche of bichlorid is going to give you a wound free from germs, especially if you have never sterilized your hands, or have handled chairs, tables, patients, mouths of dirty patients, even if you did sterilize them ever so carefully but an instant before.

Let someone else take the clothing off the injured member, and scrub him with sterile water, green soap and a good stiff brush; then wrap the wounded part and all the patient's person, and clothes, which are near the wounded part, with towels soaked in 1/5000 bichlorid solution. When a hand or foot is injured, trim the nails as closely as possible and scrub clean. Use gasoline or one of the dirt removers which comes as a paste, to get every particle of dirt off the surface. Then douche or soak in hot aseptic solution, normal saline or boric, not corrosive sublimate or carbolic acid, and be sure that your first step is to remove all blood clots and bruised tissue from the wound. Any tissue which will not live is only a breeding place for infection. Don't fail to explore thoroughly all wounds (especially scalp wounds for depressed fractures). It makes you feel cheap to have to open up, after you have placed your sutures. I once found a piece of tin three-eighths by three-fourths inch at the very posterior orifice of the bony orbital fossa after I had enucleated the shattered eye ball; a good chance for a malpractice suit had I not accidentally found it with the scissors' point while severing the

optic nerve. Don't brush the skin about a wound with a gauze or cotton compress and then use the same compress in the wound. Don't rub a wound, or you produce hemorrhage and increase liability to infection. Mop it. Keep your fingers out of it.

If you have reason to believe that a wound will become infected, use an antiseptic douche and follow it with a sterile solution. Dress with drainage. Don't put adhesive plaster next an open wound or raw surface; it becomes nasty from the serous discharge, which comes from all such surfaces and often causes infection in this way; besides, it deters the natural process of skin growing. Dusting powders act much in the same way. Use them only in selected cases. A much cleaner dressing is to saturate the gauze in boro-glyceride, which may be thinned with alcohol, if you desire. Do not use cotton at all but plenty of sterilized gauze. This dressing does not stick and is by far safer and much more comfortable. Don't take any suggestions from the patient or the mother of a wailing child about the treatment of a case. Put in the sutures, if it is necessary, and they always thank you when the wound is healed. Patients become good or poor signs of your surgical skill in the days to come, depending on your adherence to the principles of good clean surgery. Don't get nervous or faint hearted in the presence of gravely injured patients or their friends; it loses you prestige. If you abhor the work do not respond to the calls: others might enjoy it.

The antiseptic technique can be gotten by instruction and careful attention to details, but most of all by a never failing vigilance and keeping constantly in mind every act, even every move we make while in the presence of any surgical case. By all means look for numerous injuries, especially in an unconscious or anesthetized patient, and when found treat each one with due care. The small punctured wound is most liable to a serious infection. Carbolic acid is much more deadly than any other germicide. Don't forget the antitetanic serum and rather use it a dozen times needlessly than to take one chance that loses. Impacted fractures should never be broken up, or three or four doctors each take a pull on the member to make sure how securely it is impacted.

The greater number of examining fingers put into a wound the more certain are we to get infection. Don't be afraid to take out as many sutures as is necessary to open a pus discharging wound, and cleanse it most carefully.

WILLIAMSON COUNTY.

At the October, 1909, meeting of the Williamson County Medical Society, the following officers were elected for the ensuing year: T. H. Shastid, president; J. G. Parmley, secretary. At the November meeting Dr. J. G. Parmley (our secretary) was elected representative to the Medicolegal Committee. We did not feel able to send two men to the state meeting next year, and hence made one and the same man our secretary and medicolegal representative.

T. H. Shastid, President.

NEWS OF THE STATE

PERSONAL.

Dr. Henry E. Wagner, Chicago, has returned from Europe.

Dr. William E. Washburn, Kewanee, received internal injuries in the overturning of his automobile at Cherry, November 21.

Nearing the Century Mark.—Dr. William B. Hart, of Greenwood, will, on Jan. 1, 1910, celebrate his 98th birthday. He is still hale and hearty.

Dr. George Edwin Baxter, assistant editor of The Journal, has returned from six months' European travel and study, most of the time in Vienna.

Dr. Adolphus P. Standard, assistant surgeon at St. Francis Hospital, Macomb, has resigned, and will take charge of the new Graham Hospital at Canton, as medical superintendent.

Dr. Charles E. Colwell, Aurora, has been elected president; Dr. Oliver H. P. McNair, Batavia, vice-president, and Dr. R. S. Denney, Aurora, secretary-treasurer, of the Aurora Hospital.

Dr. William L. Secor and family, of LaGrange, are spending the winter in Florida. Dr. Secor has been made physician-in-chief of the new Ponce de Leon Sanitarium, St. Petersburg.

Dr. Thomas Jonnesco, of Bucharest, visited Chicago, December 21 and 22, demonstrated his technic of spinal anesthesia at the Cook County Hospital, and also delivered an address on the same subject before the Chicago Medical Society.

NEWS ITEMS.

—The Palmyra Springs Sanitarium at Palmyra, Wis., has been closed.

—The cornerstone of the addition to the Norwegian Lutheran Deaconess Home and Hospital, Chicago, was laid November 25. The new building is to cost $75,000.

—The people of Rochelle have subscribed $22,000 of the $35,000 required to make effective the offer of Emanuel Hilb of $15,000 for the establishment of a hospital in Rochelle.

—The medical staff of Graham Hospital, Canton, has elected the following officers: Dr. W. F. Zeigler, president; Dr. M. A. Richardson, vice-president; Dr. J. P. Colman, secretary.

—Dr. S. W. Jacobs, president, and H. M. Brown, of the National Aid Society of Chicago, were arrested November 30 for obtaining money under false pretenses from several physicians.

—The campaign in Monmouth for a new hospital was inaugurated November 29. It is expected that $30,000 will be raised for the erection of a new building, and half of that amount has already been secured.

—Dr. Joseph D. Silva of Rock Island has recently acquired the Harper House, the best hotel property in Rock Island, and spent $40,000 in extensive improvements. The new hotel was opened for business Nov. 27, 1909.

—The Champaign local branch of the American Health League held its second meeting of the year, November 11, at the Urbana court house. Prof. J. M. White addressed the members on "Why We Need Fresh Air and How to Secure It."

—An explosion in the furnace of the American Hospital in Chicago, November 28, wrecked the heating plant and caused considerable excitement among the patients. Dr. Max Thorek thought that the explosion was caused by dynamite in the coal.

—The clinic of the Chicago Tuberculosis Institution, now held twice a week at the Northwestern University Medical School, was transferred December 6 to the Post-Graduate Hospital. The clinic days and hours will remain the same, Mondays and Thursdays from 10 to 12.

—A "brief" of 610 pages was filed in the State Supreme Court by Louis D. Brandies, of Boston, upholding the ten-hour law for women workers. Only three pages of this is based on the law. The rest is an argument based on medical testimony as to the effect of excessive hours of work on girls and women.

—Dr. J. B. Murphy, Chicago, was awarded a judgment for $22,000 by Judge Wright against William J. Hilands, a New York promoter, last month. The amount consists of principal and interest of a sum invested in the National Bread and other enterprises upon alleged fraudulent representations of Highlands.

—The City Prosecuting Attorney filed suit, December 27, against Dr. John G. Craig, Chicago, for exposing persons to smallpox by sending a patient to the office of Dr. Spalding, Chief Medical Inspector, and for failure to report the case to the Health Department. The suit may not be heard until the patient is available as a witness.

—Dr. Harvey W. Wiley testified that two pounds of boric acid were used to preserve each 100 eggs in a shipment of preserved eggs seized in Peoria last March by government inspectors. Judge J. Otis Humphrey of the Federal Court, December 10, decided that the seizure was justified, as the eggs were injurious to health. Eggs should be, like Cæsar's wife, "above suspicion."

—Ten thousand dollars was added to the building fund of the Maimonides Kosher Hospital by the week's bazar at the West Side Auditorium, which closed December 14. A ball arranged for by the bazar committee was held at the same place, December 19. At present the fund amounts to $20,000, and the structure will be completed next summer. It will cost $75,000.

—Dr. Charles B. Fry, Mattoon, for many years local surgeon of the Illinois Central and Big Four railroads, who is soon to retire from practice and leave the city, was a guest of honor at a meeting of the railway employees of the city, November 30. The superintendent of the St. Louis

division of the Big Four presented Dr. Fry, on behalf of the employees, with a handsome traveling bag. The local employees of the Illinois Central presented him with a diamond stud and an Elk charm.

—The judges of the Municipal Court, Chicago, have decided to endorse the report of the committee of the American Institute of Criminal Law and Criminology and apply it in the trial of their cases. Under this system the inherited tendency to crime will be considered, and careful records will be kept of the physical and moral status as well as the heredity and environment of offenders. Chief Justice Olson said: "It is a great thing, and is the inception of a great stride toward a more enlightened treatment of our criminals."

—The physicians of Lewistown, Fulton County, have formed a club for mutual benefit and harmony. On November 9 the organization was completed, and will have regular monthly meetings hereafter. A fee-bill was adopted, which will go into effect December 1. All the physicians of the city united in signing this bill, and it is believed that a much better condition will prevail from this time in Lewistown. The following officers were elected: Dr. D. D. Talbott, president; Dr. Eli G. Davis, vice-president; Dr. William S. Strode, secretary; and Dr. Samuel Oren, treasurer.

—All of the buildings of the new Cook County Infirmary, on which work was begun last spring, are under roof, and the present indications are that the buildings will be ready for occupancy by the middle of January. The institution, when completed, will have cost $1,750,000, and will accommodate about 1,800 inmates, with ample provision in the general scheme for the erection of additional buildings as required. On the highest spot on the ground has been built the hospital for tuberculosis patients, 300 feet away from the nearest building of the central group.

—Dr. Charles S. Bacon, in his illustrated talk on Certified Milk in Chicago, in the public library building, November 27, spoke of the organization of the Milk Commission of the Chicago Medical Society, and stated that three country dairymen had been induced to sign contracts drawn up after the pattern of the national form, and had agreed to conform to the rigid demands of the commission. In return for this, the commission gives each dairyman a copyrighted trade-mark bearing the certification of the society, which appears on the label or stopper of every bottle.

—Thomas Foulkes, a stock-raiser of Danbury, Iowa, recently recovered a judgment of $2,200 against Dr. Francis M. Steward, of Chicago. Foulkes testified that in 1901 he was met by men who deceived him into believing he was going blind, and took him to Steward. Steward charged $1,500 for treatment. Upon charging Steward with fraud, Foulkes was told if he brought certain letters back to Chicago the money would be returned. Foulkes said he came and while with Steward was seized by a man representing himself to be a health officer, who told Foulkes he had smallpox, kept him a prisoner several days and released him only on payment of $500.

MEDICAL SOCIETY NOTES.

—The Alton Medical Society held its first banquet, November 18, at the Illinois Hotel. It was attended by twenty physicians and their better halves.

—At the annual meeting of the Kewanee Physicians' Club, November 4, Dr. F. J. McDermott was elected president; Dr. H. N. Heflin, vice-president; Dr. G. H. Hoffman, secretary-treasurer.

—At the tenth annual banquet of the Sangamon County Medical Society held at St. Nicolas Hotel, Springfield, November 8, there was a large attendance of members of the profession. Dr. Walter Ryan, president of the society, presided. Among the speakers were Dr. Henry Byford, Chicago, and Hon. W. A. Northcott, Springfield.

—The thirty-sixth annual meeting of the North Central Illinois Medical Associaiton was held in Streator, December 7 and 8, and the following officers were elected: President, Dr. Franklin A. Turner, Sandwich; vice-presidents, Drs. Alford E. Owens, Princeton, and Thomas W. Burrows, Ottawa; secretary-treasurer, Dr. George A. Dicus, Streator (re-elected); and censors, Drs. John C. White, Seatonville; Charles A. E. LeSage, Dixon; Joseph I. Knoblauch, Metamora; John M. Kaiser, Somonauk; and Alonzo B. Middleton, Pontiac. Life memberships were conferred on Drs. Charles E. Cook, Mendota; Alfred E. Owens, Princeton; Thomas H. Settler, PawPaw, and Benjamin F. Landis, Tiskilwa.

PUBLIC HEALTH.

—Hygienic paper drinking cups in penny-slot machines have been installed in the Northwestern depots and trains.

—It is thought that more than 3,000,000 Red Cross stamps were sold during the holidays to raise funds for the Chicago Tuberculosis Institute.

—Twenty-eight boarding pupils and nine Dominican sisters of St. Mary's Academy at St. Charles were placed under quarantine on account of scarlet fever in November.

—President William Busse, of the Cook County Board, in his annual message, advocates rebuilding the old parts of the hospital, to cover an entire block 600x400 feet. This would accommodate about 2,500 patients.

—School medical examination in Oak Park by Dr. Guy Conger disclosed over 52 per cent. of pupils with defects of the nose or throat; 13 of hearing, 48 of sight. It was found that nearly one-half of those examined last year showed much improvement, due to medical treatment in the interim.

—Rock Island has contracted for an up-to-date filter plant of the mechanical or American type. The building will contain six filter units built of reinforced concrete, each having the capacity to furnish 1,000,000 gallons of purified water in twenty-four hours. Each one can be cleaned independently of the others. The present three-filter basins will be used for sedimentation and adding the coagulant solution.

—The Bulletin of the Chicago Department of Health estimates the approximate cost of tuberculosis to the public of Chicago during the year 1908, was $23,635,000, which is considered a conservative estimate. The items included the money value of lives lost, which varied from $300 to $6,500, the wages lost, the cost of illness and loss of wages. During nine months of the current year 2,957 deaths were reported from tuberculosis and 3,024 new cases were reported.

—The flat building was denounced at the second annual banquet of the Cook County Real Estate Board. E. R. Pritchard said: "If our citizens are allowed to keep on inhabiting these flats, we will become a race of physical degenerates. They don't raise big men in flats." Rev. R. A. White said: "I want to urge you men to continue to sell homes to people; every man who buys a home becomes a permanent resident, also becomes a better citizen than he was before he bought that home."

—The Rotary Club is circulating a petition to the council to appropriate $2,000,000 to the work of the Chicago Department of Health. The proposed amount would compare favorably with the fund at the disposal of the New York health authorities. The estimate reported by the financial committee for the health department for 1910 is $535,972, which is $71,898 *less* than the appropriation for 1909. It is said that Dr. Evans offered to reduce his own salary 10 per cent. so that the amount could be added to the salary of Mr. Ball, chief sanitary officer.

—Another "cold-air cure" has been conducted the past three months under the direction of Principal William E. Watt, of the Graham School. "The children are delighted," said Principal Watt, "to breathe pure air all day, in school and out. They are not compelled to sit in a room under such conditions, but there are many more clamoring to get in. It has been a most successful experiment. Their resistance to disease has been raised and they are much more healthy." A room containing first-grade pupils was seen recently with windows wide open and the children studying with their wraps on.

—Dr. E. Fletcher Ingals, president of the Chicago Sanitarium Association, has been active in planning for the establishment of a sanitarium for incipient consumptives. The purpose of the institution is to furnish persons of moderate means a place to be treated at moderate cost and where they can be partially self-supporting. Twenty-five prominent physicians and a number of business men are working on the plans for the colony, which may be located on the Valmora Ranch of 1,000 acres near Las Vegas, N. M. It is said that $50,000 is already pledged to start the project, and more money is to be raised to purchase and equip an institution that will accommodate 300 patients.

—The Juvenile Protective Association, through its attorney, Harry E. Smoot, has begun a new war against tuberculosis. The arrest of Stanley Buras charged with expectorating on the floor of his home after repeated warning from doctors and nurses, is only a start against neglectful parents. "We intend to prosecute every case of the kind brought to us or that we discover. It has been the rule for everybody to throw up both hands and retire in defeat when consumptive parents are slov-

enly. It shall be the rule in the future that the law will step in instantly to the rescue of the helpless children. We are going to make these prosecutions just as much a matter of course as taking a drunken man to a police station."

—Dr. G. B. Young, surgeon in charge of the Marine-Hospital in Chicago, takes exception to the statements claiming that the expense of treating patients at this hospital are higher than in other government institutions. He is reported as saying "that patients can be sent to first-class private hospitals for less money, but they will not receive the care of first-class patients that is given them here." There are twenty-two employees, including the officer in charge of the down-town dispensary. The reason that these cost more than a civil hospital is that every one working here receives a salary. In a civil hospital physicians attach their names to the hospital's roster for the prestige and opportunity it gives them for extending their knowledge. Patients are cared for by internes who are completing their education, and nurses from nurses' training schools work for the practice it gives them.

—Dr. W. A. Evans, Commissioner of Health, Chicago, criticizing the over-head heating system adopted in the schools several years ago, in an article on "Hygiene of Schools and School Children," in the current number of the *Educational Bi-Monthly,* says: "The air should be introduced under the seats through ducts having many openings. The exit should be at the ceiling. The inlets and exits for air should be so arranged as to permit only the smallest degree of admixture of the foul and fresh air. It is not alone that the foul air is full of carbon dioxid and other excretory gaseous substances, but that it contains a bacterial flora which should be led out of the breathing zone as rapidly as possible. The bacteria which one child has coughed, sneezed or even breathed out should be lifted as rapidly as possible above the breathing zone of the other children."

—It is reported that the National University Medical School of Chicago, through L. D. Rogers, vice-president, has started a mandamus suit and action for $500,000 damages against the State Board of Health in the Superior Court, Chicago. The mandamus bill charges the State Board had no authority to publish a list of medical schools which they decided were in good standing. It is alleged that the board had discriminated unjustly, favoring some and showing a malicious disposition toward others. This is the second time the school has been in bad odor with the Board of Health. The diplomas were not recognized from June 20, 1907, to September, 1908. The school was again declared not in good standing April 14, 1909. The bill asks that the members of the board be compelled to recall their action and again declare the school in good standing and admit their graduates to examination.

—Dr. W. A. Evans, in an address to the City Club, intimated that there was trouble ahead unless more money is spent for the preservation of public health. "In 1856 Chicago spent 40.8 cents per capita to preserve its public health," he said. "This was reduced until in 1861 the expense

was 1.2 cents a person. Then h—l brooke loose. Cholera came. This year we have spent 25.3 cents per capita—15 cents less a person than before the war. New York does not have quite twice the population of Chicago, yet the New York health department spends nearly eight times the amount of money that the Chicago department does. This year we spent $10,000 (in the summer campaign) and have saved the lives of 500 babies. If we could get twice that amount we could save 2,000 babies. Because of the lack of money babies die. We save our gold and thereby kill the babies. I believe with all the sincerity my nature is capable of that we are operating the health department as economically as is any other business in Chicago, either private or public. A dollar buys as much there in material and labor as it does in any other part of the city. The men in the health department are working their heads off. Some of them are on duty this afternoon while most of the city are at leisure. Some of them will be working until 10 or 11 o'clock to-night. Some of them will be working to-morrow. The employees of my department are underpaid. They don't get what they earn. They don't get what they are entitled to. Chief clerks in other departments get more than the heads of bureaus do in my department. Compare the ability and experience of the doctors in the health department with that of the lawyers in the legal department. Take the salaries of each—but I guess I had better not go on with that comparison."

INCORPORATIONS.

Dr. Rainey Medicine Company, Chicago; capital stock increased from $25,000 to $50,000.

Whiteside Public Hospital, Sterling; establish and maintain hospital; incorporators, Stephen A. Allen, Frank Anthony, Frank W. Broderick.

Crescent Medical University, Chicago (not for profit); give instruction in arts and sciences; incorporators, Alexander Chittick, J. Nelson Barnes, D. H. Waggoner.

West Side Clinical Circle, Chicago; scientific, fraternal and social; incorporators, George Halperin, M.D., Alexander S. Hershfield, M.D., Meyer H. Lebensohn, M.D.

National Herb Remedies Company, Chicago; capital, $30,000; manufacturing and selling herb preparations; incorporators, William B. Mey, Ernst Schmidt, Erwin Breyer.

Practitioner's College, Chicago; capital, $2,500; conduct hospital, dispensary and training school for nurses; incorporators, Floyd Ramp, Wendell A. Diebold, Irvin I. Livingston.

Medical and Hospital Aid Association, Chicago; capital, $2,000; furnish medical and hospital services; incorporators, George E. Q. Johnson, Alexander M. Smietanka, Charles P. Molthrop.

REMOVALS.

Dr. Ward Akester has removed from Casey to Clay City.

Dr. F. G. Dufour has removed from Oquawka to Chenoa.

Dr. C. E. Duncan, of Flora, is now located at Vincennes, Ind.

Dr. R. O. Brown has removed from Mount Morris to Forreston.

Dr. R. H. McKnight has removed from Clay City to Kansas, Ill.

Dr. M. Harris and Dr. H. J. Schmidt are now located at Newton.

Dr. Effie Current has removed from McCook, Neb., to Brush, Colo.

Dr. Thomas M. Aderhold has removed from Zeigler to El Reno, Okla.

Dr. H. M. Austin has removed from Hindsboro to South English, Iowa.

Dr. Joseph M. O'Malley has removed from Amboy to Ohio, Bureau County.

Dr. J. L. Cass has removed from Pawnee to Hinckley, DeKalb County.

Dr. William Mauritz has removed from 833 W. Sixty-third Street, Chicago, to Morrison.

Dr. E. M. Barnes has removed from 78 Illinois Street, Chicago Heights, to Troy, Iowa.

Drs. A. J. and M. B. Newell have removed from Onarga to W. One Hundred and Twentieth Street, Chicago.

Dr. Carrie K. Bartlett has removed from 787 W. Diversey Street, Chicago, to Texarkana, Ark., R. F. D., No. 6.

Dr. C. E. West, of Lincoln, has located at Sixth and Capitol avenues, Springfield, as an eye, ear, nose and throat specialist.

MARRIAGES.

Harry X. Cline, M.D., to Miss Grace Goodall, both of Marion, December 7.

Arthur Edison Gammage, M.D., Chicago, to Miss Myra Gillis of Rio, November 4.

Augustus Stout Hunt, M.D., to Miss Tossie Mains, both of Jerseyville, December 8.

Albert Havens, M.D., to Miss Gertrude Crabtree, both of New Philadelphia, November 20.

John Jacob Rudin, M.D., Galesville, to Miss Jessie M. Nash, of Mansfield, November 13.

Henry Frost Hooker, M.D., Danville, to Miss Nellie McGrath, of Green Bay, Wis., November 25.

James Alexander Harvey, M.D., to Miss Regina Jones, both of Chicago, at New York City, November 30.

DEATHS.

Amy T. Mace, M.D., Harvey Medical College, Chicago, 1897; died at her home in Chicago, Oct. 15, 1908, from splenic leukemia, aged 59.

John A. Fitzpatrick (license, Ill., 1880); of Lemont, Ill.; died in St. Joseph's Hospital, Joliet, Ill., December 1, from hemorrhage, aged 55.

Thomas B. Hicks, M.D., Cleveland (Ohio) Medical College, 1872; died at his home in New Haven, Ill., December 3, from injuries inflicted by an insane patient, aged 68.

Charles Carrow Thompson, M.D., Kentucky School of Medicine, Louisville, 1872; Baltimore Medical College, 1892; died at his home in Taylorville, November 4, from multiple neuritis, aged 60.

John Clinton Barnes (license, years of practice, Ill., 1877); for forty-four years an eclectic practitioner of Illinois; died in a hotel in Arcola, Ill., November 23, from acute nephritis, aged 74.

Allen Perry Johnston, M.D., Rush Medical College, Chicago, 1906; of Chicago; formerly an interne in the Chicago Policlinic Hospital; died at that institution, February 10, from pneumonia, aged 32.

Chads D. Chalfant, M.D., Western Reserve University, Cleveland, Ohio; a member of the Illinois State Medical Society; died at his home in Streator, November 22, from diabetes.

Jay Judson Thompson, M.D., Chicago Homeopathic Medical College, 1888; professor of surgery in Hering Medical College, Chicago; died at his home in that city, November 22, from cerebral hemorrhage, aged 52.

Josephine E. McKenzie Roberts, M.D., Hering Medical College, 1897; assistant to the chair of diseases of women in that institution; died at her home in Chicago, November 8, from angina pectoris, aged 59.

William J. Laird, M.D., College of Physicians and Surgeons, Chicago, 1896; formerly surgeon of the Bay de Noc Company, at Nahma, Mich.; died in Englewood, Chicago, November 15, from pulmonary tuberculosis, aged 45.

Charles Albert Palmer, M.D., Northwestern University Medical School, Chicago, 1876; a member of the American Medical Association; for seven years a member of the Board of Education of Princeton, Ill.; twice mayor of Princeton; for a time president of the Board of Health, and a member of the local pension board; died at his home in Princeton, November 6, from pernicious anemia, aged 54.

John Jay Hardin Conner, M.D., University of Michigan, Ann Arbor, 1877; a member of the American Medical Association; surgeon of the Springside Coal Mining Company and Pana (Ill.) Coal Mining Company; secretary of the local pension board; formerly president of the District Medical Society of Central Illinois; and ex-secretary of the Pana Board of Health; died at his home, November 10, from acute endocarditis, aged 60.

Alfred D. Kohn, M.D., Rush Medical College, Chicago, 1898; a member of the American Medical Association; in 1907 and 1908 a member of the Chicago Board of Education; assistant in medicine in Rush Medical College; chief of the clinic on gastrointestinal diseases of the United Hebrew Dispensaries; attending physician to Michael Reese Hos-

pital; a specialist on diseases of the stomach and intestines; died in the Michael Reese Hospital, December 2, from cerebral hemorrhage, eight days after an operation for appendicitis, aged 40.

Book Notices.

Dorland's American Illustrated Medical Dictionary. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, and kindred branches; with new and elaborate tables and many handsome illustrations. Fifth revised edition. By W. A. Newman Dorland, M.D. Large octavo of 876 pages, with 2,000 new terms. Philadelphia and London. W. B. Saunders Company, 1909. Flexible leather, $4.50 net; indexed, $5.00 net.

The aim of the author of this work has been to produce, in a volume of convenient size, an up-to-date Medical Dictionary, sufficiently full for the varied requirements of all classes of medical men. Physicians and students have long felt the need of such a work. The book does not claim to be an encyclopedia; it is a dictionary, a concise and convenient word-book, aiming to furnish full definitions of the terms of medicine and kindred branches, and such collateral information as medical men generally would be likely to look for. The author has sought a middle course between the large, unwieldy lexicon and the abridged students' dictionary, avoiding the disadvantages of each.

Besides the ordinary dictionary matter, it has seemed desirable to include a large amount of information arranged in tabular form. In addition to the usual anatomic and clinical tables, there will be found specially prepared tables of Tests, Stains and Staining Methods, Methods of Treatment, etc., which, it is believed, will prove of distinct value.

The important features of pronunciation and derivation have received the most careful attention. The system used for expressing the sounds is extremely simple, and yet it indicates with accuracy the exact pronunciation of the words.

A special feature has been made of those words in the realm of biology which occur so frequently in the literature of physiology and pathology. Much new matter has been added covering the terminology of parasites, especially the protozoa; the B. N. A. anatomical terminology has been included, and the latest classification of the proteins has been adopted. It is believed that the pictorial features of the work have proved very acceptable to users of the book, and these have been enhanced by the addition of a plate showing the regions of the body according to the terminology of the B. N. A.

Medical Gynecology. By S. Wyllis Bandler, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Second revised edition. Octavo of 702 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, $5.00 net; half morocco, $6.50 net.

This book has been written as a result of frequent inquiries for a work dealing with the non-operative side of gynecology. It represents, with elaborations, a grouping and rearrangement of his clinical lectures. The various topics have been reviewed from the standpoints of the symptoms, the disease, the bimanual and microscopic findings, and the general physical and nervous state.

Operative procedures have been viewed as a last resort in those numerous conditions where medical means can accomplish so much. In no field of medicine is conservative treatment of greater value, but, combined with this, there is needed a knowledge of the relation of normal and pathologic genital functions to the general physical and psychic health of women.

The chapters on electricity and hydrotherapy have been enlarged. Several pages on head zones have been added as an aid to diagnosis. Various other additions have not interfered with the purpose of keeping this book within the limits which tend to make a practical working compendium.

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ORIGINAL ARTICLES

THE TREATMENT OF COMPOUND FRACTURES.*

EDWARD H. OCHSNER, B.S., M.D.
Attending Surgeon to Augustana Hospital; Adjunct Professor of Clinical Surgery, University of Illinois, Chicago.
CHICAGO.

Since a compound fracture is a fracture of the bone which is complicated by sufficient destruction of the superimposed soft tissues to cause a wound to exist between the fractured bone and the surface, the treatment of compound fractures requires attention to certain points and details which are not necessary in the treatment of simple fractures. The most important of these are the prevention of infection and the greater care and skill that is required to devise a retention dressing which will actually hold the fractured ends in apposition a sufficient length of time, without undue discomfort, and which will permit the inspection and dressing of the wound of the soft parts if this becomes necessary or desirable.

As many of these compound fractures occur in factories and on the street, the question of first aid is extremely important. It is consequently necessary to observe a few simple rules when one is called to one of these cases. The clothing should be cut open with a knife or shears, so that it may be easily removed, a piece of sterile gauze, or, if this is not at hand, a freshly laundered towel, pillow case or sheet, is wrapped about the injured member. If cotton is available it is applied over this and held in place by a snug bandage. If the hemorrhage continues in spite of this an Esmarch constrictor is applied. The extremity is now placed in a pillow, blanket or board splint and the patient is transported to the home, physician's office or hospital for further care. The injured part should not be handled roughly, unnecessarily manipulated or the deep wound handled or probed.

* Read before the Chicago Medical Society, in Symposium on Fractures, Oct. 13, 1909.

If the patient has reached his permanent abode, the first question that usually arises for decision is whether an anesthetic is indicated or not. In compound fractures I have practically always insisted on a general anesthetic, because one can be much more certain of rendering the field sterile. The only exception I have made to this rule is in compound fractures of the fingers and toes in a person who is willing and able to bear a moderate amount of pain. In these latter cases I have uniformly employed a little trick that I have found very useful. While the instruments are being sterilized I have the patient immerse the extremity in 2 per cent. watery solution of carbolic acid for five or ten minutes. If the rest of the necessary work is done reasonably dextrously and quickly this usually anesthetizes the parts sufficiently so as to make the necessary disinfection almost painless.

If the injury has been severe we must decide whether an amputation is required or not. In answer to this I would say that so long as the force which has caused the fracture has not cut off all the principal arteries supplying the part a primary amputation is never justifiable, as with proper treatment the extremity can nearly always be saved. I have never primarily amputated an extremity when there was any demonstrable arterial circulation left in the distal part. One can scarcely be too conservative in this matter. If the following directions are carefully carried out, one has practically nothing to lose in conservatism and often much to gain, for Nature has wonderful reparative powers, especially in the young, and many times almost completely severed extremities can be saved to the patient.

The next point of importance is that of rendering the area as nearly sterile as possible. After one of the above methods of anesthetization is effective, cover the wound with a piece of sterile gauze in order to prevent washing the dirt from the surrounding skin into the wound, then scrub the entire extremity thoroughly with green soap, water and brush and rinse with sterile water. Now take fresh water and gauze and clean the wound itself thoroughly in the same manner. In order to do this satisfactorily, many succeeding basins or pitchers of boiled water may be required. The whole limb, including the wound, is now carefully washed with ether, then thoroughly cleansed with turpentine, swabbed out with tincture of iodin and finally washed with alcohol.

For the purpose of removing grease and grime there is nothing quite so effective as turpentine, besides it is one of our best antiseptics. Tincture of iodin I have always used, because I know of no other so slightly toxic antiseptic whose antiseptic qualities affects so large a variety of pathogenic bacteria. Tincture of iodin also serves the useful purpose of searing over the raw surfaces. Many of these wounds cannot be rendered perfectly sterile by any of the means at our command, and if tincture of iodin is not employed a small focus of infection may contaminate the whole wound in a few days. If this agent is properly applied it will close the cut ends of all veins, lymphatics, tendon sheaths and bursæ and so completely sear all raw surfaces as to localize infection. It will also inhibit the growth of bacteria and prevent their rapid multiplication by

rendering the wound dry, thus decreasing the amount of available pabulum, and in that way give the patient time to erect his defensive barrier of leucocytes before the number of bacteria in the wound overwhelm him.

Tincture of iodin is also very useful in destroying the much-dreaded tetanus bacillus, though for this purpose it is no longer so essential as it formerly was, as we now have an excellent preventive in antitetanus serum. For the past six years I have always used an immunizing dose of antitetanus serum at the time of the first dressing in all badly contaminated cases of compound fracture, and in none of these did tetanus subsequently develop. The only case of death from tetanus complicating compound fracture that I have had in this period was in a physician who came to me six days after having sustained a compound fracture of the leg, who was suffering from severe sepsis when I first saw him and who developed tetanus within twenty-four hours after admission to the hospital and died three days later.

If a large quantity of street or garden dirt has been rubbed into the wound it is sometimes necessary to trim off the lacerated skin edges with a sharp knife and even to cut off small particles of muscle and fascia in order to satisfactorily cleanse the part, and in order to get at the pockets containing dirt it is sometimes necessary to enlarge the wound in various directions. By carefully and conscientiously following the above routine in every case I have never had a fatal or serious septic infection complicating a compound fracture, a fair proof, I believe, that this danger, even if it cannot be entirely eliminated, can be reduced to a minimum. After the wound has been rendered thoroughly clean, it is well to inspect it to determine the exact condition of the fracture, to carefully remove tendons and nerves, fascia, and pieces of muscle from between the ends of the bone, to remove detached spicules of bone, to ligate ruptured vessels, to determine how much one will do in the way of repairing severed muscles, fascia, tendons, and nerves, and how to drain.

In reference to the reuniting of torn tendons and nerves, I would say that if the soft tissues have been badly lacerated, if dirt and grime have entered the wound in considerable quantity, the less plastic work one attempts at the primary dressing the greater percentage of good results one will have. In such cases one's entire efforts should be directed toward saving the life and limb of the patient and to get good bony apposition, and to leave the suturing of the tendons and nerves to a subsequent plastic operation when the wound has been entirely healed for some time.

I am convinced that an attempt to do too much at the time of the first dressing often necessitates a subsequent amputation. Such plastic work not only increases the primary shock very considerably, but it also increases the danger from sepsis, and often interferes with the circulation of the extremity distal to the point of the wound and fracture.

The question whether the bone should be sutured or wired at the time of the primary dressing is often asked. I would say "No," most emphatically. By applying the proper retention apparatus, good bony apposition can be secured in almost every case without it, hence it is useless; and, as all useless things in surgery are bad, it should certainly not be

done in those cases in which good apposition can be secured without. Even where good apposition cannot be secured without it, it is better to allow the wound to heal first and subsequently do a bone suture operation. The great objection to suturing or wiring bone at the first dressing is the fact that it almost invariably causes more or less bone necrosis. This objection does not hold if one can bring the fractured ends together by passing the sutures through the fascial or tendinous covering of the bone, as in fractures of the patella.

We all know how long it takes for a piece of necrotic bone to separate. In some dog experiments several years ago I found that if the wound did not heal by primary union a small bobbin-like sequestrum would subsequently be exfoliated from each drill point. The same phenomenon I have several times seen after the use of the Parkhill clamp. This delays the first healing many months, and sometimes requires a subsequent operation for the removal of these sequestra.

The next question that has to be decided is usually the question of drainage, and with it the question of how much of the wound it is best to close. Of course, no hard and fast rule can be laid down, but I am of the opinion that the tendency is to close too much of the wound at the primary dressing. I am sure that it is much safer to err on the side of too little closure of the skin wound, because any defect can be easily and quickly closed later by Thiersch skin grafts, when all danger of sepsis has passed. Even wounds caused by the perforation of the bone will do quite as well if not sutured.

In a thoroughly drained wound severe septic intoxication is very rare, as the tendency of the lymph is to continually wash out the septic material, thus giving the organism a chance to protect itself by a wall of leucocytes. If the drainage is insufficient, the pathogenic bacteria and their toxins are constantly being forced into the lymph and blood circulation, the leucocyte barriers are again and again broken down, until the resisting power of the patient is finally overcome.

The form and kind of drainage employed will depend upon the nature of the wound. On the whole, I believe that split rubber tubes or cigarette drains are much to be preferred to the old-fashioned gauze drainage so much in vogue some years ago. It is all-important to secure thorough drainage the first few days until the leucocyte barrier is established. Gauze drainage is very apt to cause retention in pockets at various points, and thus defeat one of its most important objects.

In compound fractures of the skull, with laceration of the dura as a complication, it is very important to close the primary wound after excising the bruised, mashed, and infected skin, bone and dural margins, and to make a new drainage opening one or two inches away from the point of compound fracture. This procedure will prevent many cases of hernia cerebri that otherwise are almost sure to occur in case every particle of infected material has not been removed during the disinfection.

There is one other reason, besides the possibility of sepsis, why primary drainage should be very thorough, and I am afraid it is a consideration which is too often lost sight of. I refer to fermentation fever, or

so-called primary wound fever, which I am sure is a common cause of death in severe compound fractures in that it causes secondary shock. We all like to see a reasonable amount of fermentation fever in compound fractures, as it is an evidence of the resisting power of the patient, but fermentation fever can be so excessive as to actually cause death. This excessive fermentation fever I am sure can be prevented in many cases if the wounded tissues are not unnecessarily manipulated, if at the primary dressing too great an attempt is not made to repair the lacerated tissues, and if the wound is left wide open and thoroughly drained.

The term thorough drainage may mean so many different things to different surgeons that I would like to explain what I mean by it in these cases. The majority of compound fractures that have come under my care left the operating table after their primary dressing with larger skin wounds than they had when they went upon the operating table. The larger my experience has gotten, the fewer stitches I have applied in these cases, and the more pockets I have obliterated by cutting through the overlying skin.

We now come to the question of immobilization, and this is the problem which requires the greatest amount of ingenuity, because no textbook or even treatise or system can be so complete as to give directions in regard to the kind of splint or immobilizing apparatus which should be used in every conceivable contingency. No two cases are alike, and the different complications and consequent varying requirements are practically innumerable.

As in simple fractures, our aim must be to get the fractured ends in proper relation to each other, and to hold them in this position until union has taken place; in compound fractures we must, in addition, secure opportunity for drainage. All this must be accomplished without undue discomfort to the patient. In compound fractures this is usually difficult and sometimes impossible, but with good judgment and perseverance it can usually be satisfactorily solved.

To enumerate and describe the different kinds of material and splints that have been used for compound fractures would require pages and pages, and is beyond our purpose and time limit. Any splint which fulfills the above requirements, no matter what it is made of, or how it is applied, is the one to use in the individual case. To get the ends in apposition and to hold them there is usually the less difficult part of the problem, but to so apply the splint that the wound can be inspected and dressed without disturbing the retention apparatus, to have it so arranged that the wound secretions can find exit without soiling the permanent dressings, is often a very difficult matter, and yet the more perfectly we solve this problem the more satisfactory our results will be. If we can so plan our method of treatment that the splint which we apply at the primary dressing will not have to be disturbed until bony union has taken place, we will have done much for the patient. The frequent changing of the splint in compound fractures has many serious objections. In the first place, it is apt to disarrange the proper apposition, and as a result one of two things is likely to happen: either there will be

so much displacement as to result in non-union, or if the displacement is not so great an excessive amount of callus will develop, which is apt to cause inclusion of nerve trunks and interference with circulation. In the second place, it causes the patient a great deal of suffering. This sometimes saps the vitality of the patient to such an extent that he is unable to withstand the concomitant sepsis. It causes an additional trauma to the already devitalized tissues, and consequently facilitates absorption of septic material. In a robust individual these things may not make any great difference as to the ultimate result, but in a very delicate individual, or one whose strength has been greatly impaired by the accident, it may be just the one thing that will be too much for the patient to bear. It is not an uncommon thing to see one of these patients come from the dressing-room utterly exhausted, and it is surely well worth our while to try to eliminate this evil whenever we possibly can.

In compound fractures of the lower two-thirds of the femur, in which plaster-of-Paris dressing will often not hold the fragments in good apposition, I have found the pneumatic splint quite satisfactory. In other compound fractures in which a fenestrated plaster-of-Paris dressing can be employed I have found the method recommended by Dr. Hugh Crouse, of El Paso, Texas, very useful. It consists of the following procedure: When the wound has been properly disinfected and the fracture ends are in good apposition, a small sterile dressing covering the wound and the surrounding skin for an inch or two in every direction is applied. Then the remaining portion of the limb that it is intended to encase in the plaster-of-Paris splint is wrapped in cotton and covered by a bandage and the plaster dressing applied in the usual manner, strengthening it as required with wood, steel, or wire strips. The fenestrum is then made, and the small dressing covering the wound is removed. A piece of sterile gauze of several thicknesses is now cut so as to overlap the wound edges a little, the exposed skin is carefully dried with ether and sterile gauze, and then the preparation, which I will describe directly, is carefully packed between the limb and the cast.

The preparation or mixture is secured by dissolving small pieces of Sampson's or any other good dental crown rubber in commercial chloroform, using sufficient of the rubber to make a semifluid, mucilaginous paste. Into this small pieces of lamb's wool are cut, and it is now applied as above directed. In this way an impervious dam is constructed which thoroughly protects the cast against any soiling.

This dressing has only one objection: in little children with sensitive skins the chloroform sometimes causes considerable burning. My associate, Dr. Abelmann, substituted for the rubber chloroform mixture a mixture consisting of celluloid dissolved in 30 parts of alcohol and 70 parts washed ether. To this the finely cut lamb's wool is added and the whole mixture is packed in in the same manner as the rubber chloroform mixture. This dressing can be applied without causing the slightest amount of pain and is nearly as good a watershed as the other.

The question as to what simple fractures it is desirable to primarily treat by suture and thus virtually intentionally make them compound is

one which is brought to the attention of the medical profession frequently. Personally I have followed this rule: If I am unable to secure reasonable apposition by the means at my command or if I have reason to believe that some soft tissue is interposed between the fractured ends I do not hesitate to cut down upon a fracture and suture the ends with chromic catgut. I have practically adopted this method in all fractures of the patella and the olecranon, because in these fractures perfectly satisfactory apposition without the use of sutures is rarely if ever possible. In fractures of the long bones I have found it necessary to resort to this procedure only on a few occasions, as in the great majority of cases I have been able to secure satisfactory apposition by simpler means.

2106 Sedgwick Street.

THE NEW PURE FOOD CATSUP: OR, WHEN IS A CHEMICAL NOT A CHEMICAL?*

J. A. Wesener, Ph.C., M.D.
CHICAGO.

The preserving of foods for future use has been practiced by mankind from early times. The methods which have been used for this purpose have been such as drying fruits and meats to remove the excess of water and the adding of substances to them by external application, such as smoke, salt, saltpeter and other substances as in the preparation of meats by drying, smoking and pickling. The use of vinegar and spices in the preparation of foods and relishes for the table has been practiced a considerable time. The purpose of these materials was to act as a preservative to the other ingredients of the food product as well as to improve its flavor because of their condimental value. In the preservation of food by the use of smoke there are introduced products which, when separated in the process of destructive distillation, are highly poisonous, and when taken in the concentrated form by man produce death. These substances include phenol and cresol and others of like character.

Salt, although constantly used in the preparation of all foods, and found to be an absolute necessity, is a preservative when used in excessive quantities and was probably the earliest preservative in the preparation of such substances as meats and fish.

The use of saltpeter followed later and was, and is now, extensively used in the preservation of meats, such as corned beef, ham and a long list of other products which are now put upon the market by the large packing concerns. The preserving action of saltpeter probably depends upon the change of the nitrate radical to the nitrite. At least this change always occurs during the process of preserving of meats by the use of saltpeter. The red coloring matter which is imparted to corn beef, ham, etc., is brought about by the presence of nitrite reacting on the coloring matter of the meat.

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* Read in a Symposium on Pure Foods before the Chicago Medical Society, Nov. 10, 1909.

Sugar is found as a natural preservative in such substances as dried raisins and other dried fruits and is extensively used in the preservation of fruits and jams of all kinds. It requires the presence of considerable sugar to bring about the complete preservation of the material, but lesser quantities contribute largely to this end, although complete fermentation and putrefaction is not prevented by it.

Vinegar has been used as an article of food from early times. It is used for two reasons; first, on account of its sour and agreeable flavor, and, second, because of its preserving action.

Spices were in use in biblical times and they are extensively used not only for improving the flavor of foodstuffs, but as assisting in preserving them against fermentation and putrefaction.

TOMATO CATSUP.

Before going into the general discussion of the preparation of catsup, I wish to announce that I am not now, nor have I ever been, retained by any company that sells preservatives, and that the only interest I take in this matter is a purely scientific one, and I am writing from that standpoint alone.

Catsup is a name given to several kinds of sauces much used as a relish. It is made of several different substances, but the catsup most common to most markets of this country is tomato catsup, which is now so common that no table is considered complete without it. Although the tomato is supposed to be a native of America, it first found its use as an article of food from seeds which were brought from Europe. The plant was long cultivated as a curiosity before it was accepted as a food. Many were under the impression that, belonging to the night-shade family, it must possess poisonous properties. Of late the use of it as a garden vegetable has been gradually growing, and it is now perhaps one of the most common vegetables grown. Various methods of preparing this article for food are now common. It may be eaten raw, or it may be cooked and eaten direct or canned. One of its largest uses is in the preparation of catsup.

Catsup was formerly prepared solely by the housewife. The tomato was recognized by her as one of the most difficult substances to preserve, and there is hardly a person living who does not have some reminiscences of explosions which have occurred in the cellar by the fermentation of this variety of vegetable. The common way of preserving the catsup by the housewife was by the use of sugar, vinegar and spices, then boiled and concentrated. The containers which were used were usually bottles, and these were filled and hermetically sealed while the finished product was still hot. They were then placed on shelves in the cellar. If no fermentations and explosions took place, the product was correctly made, and the housewife would then tell her neighbor the good luck she had with the catsup she made that fall. In case the product did ferment, bottles which showed this action were again worked over by boiling, more sugar, vinegar and spices added, and then rebottled. Although the first preparation of the tomato catsup retained little, if any, of the tomato flavor, the second treatment of the fermented product removed any sug-

gestion of the original flavor of the tomato. The concentration of people in large cities where they were no longer able to produce their own tomatoes and make their own catsup called for the manufacture of this product on a larger scale by those who could devote a great part of their time and attention to it and arrange for the distribution to each household according to its needs.

On account of the element of luck which was always present in the household way of preserving catsup the manufacturer, by the aid of science, worked out a method which overcame all of the so-called luck in the preparation of this material. This was absolutely necessary to meet the new economic conditions which had arisen. This product had to be shipped long distances and remain on the shelf for months and years before it could reach the consumer. Any defects in its preparation entailed on him serious loss aside from the danger of deleterious effect on the consumer from eating fermented and decomposed food. Catsup prepared by this latter process has numerous advantages. Aside from that of more thorough preservation, it retains much of the original tomato flavor. It is thinner and more conveniently removed from the container and is commonly eaten by spreading it on the bread.

The essential point in this new method of preserving catsup was to introduce into it substances which assist in its preparation without in any way reducing or injuring its quality or without adding any deleterious substance to the product itself. A natural preservative which is found extensively in Nature and which contributes to the long keeping of fruits, such as cranberries, plums and some berries common to the old world, is benzoic acid, and what should be more natural than for intelligent business men and men of science to look to a preservative of this character to meet the special requirements which they found in the preparation of tomato catsup.

THE NEW PURE FOOD CATSUP.

The new pure food catsup which is a step backwards in the art of manufacturing this product came about by the attack of the United States Department of Agriculture upon the use of benzoate of soda in the preparation of foodstuffs. Excluding this article from use in the manufacture of catsup, it was necessary to substitute other preservatives in its place, as otherwise it would be impossible to preserve this product. Sugar and tomatoes are prone to readily ferment, and the result of their combination in the presence of bacteria is like the adding of fire to gunpowder, an explosion.

The manufacturer, then, to preserve this new pure food catsup, was obliged to, first of all, change his formula, thereby changing the flavor and character of the product upon which he had spent millions of dollars in advertising and establishing a well-earned reputation. If the particular brand of catsup which the manufacturer was putting on the market was of the sour and spice type it was very easy for him to preserve this catsup by the use of excess of vinegar and spices and without the use of any benzoic acid. If, on the other hand, the brand of catsup was of the sweet type and which, by the way, is the most preferred by

the consumer, the addition of an excess of vinegar and spices called for an excess of sugar in order to disguise to the taste the excess of spices and vinegar, and this method spoiled the delicate flavor of the catsup, which flavor is retained in catsup preserved with benzoic acid. For it is well known that benzoate of soda and benzoic acid have no flavor and do not in any way modify the flavor in which they are used. The present way of preserving the new pure food catsup is by either the use of an excess of vinegar and spices and then boiled down to a greater density than where benzoic acid is used; or by the addition of an excess of vinegar and essential oils and fluid extract of capsicum. The essential oils and fluid extract of capsicum are added last when the product has been boiled down to its proper density to avoid volitilizing the essential oils.

Within the past three or four years I have made extensive experiments in the preservation of catsup without the use of benzoate of soda or benzoic acid. I have found that where the catsup was sufficiently concentrated with an excess of spices, the product would keep well, although as already stated, the tomato flavor was almost entirely disguised by the excess of aromatics and vinegar. I also found that the product could be better preserved by the use of the essential oils, excess of vinegar and fluid extract of capsicum, the latter being especially beneficial as a preservative. Catsup preserved in this manner is much darker in color and the product preserved by the use of the essential oils and fluid extract of capsicum usually shows quite a discoloration in the neck of the bottle. If you should find this condition in catsup brought upon your table you could readily surmise the cause and your conclusions will be well strengthened by the spicy taste of the product.

PRESERVATIVE EFFECT OF BENZOIC ACID.

The preserving action of benzoic acid has long been recognized, and it has been found that this material in even very small quantities amounting to less than .05 per cent. is effectual in checking fermentation and even destroying many forms of bacteria. The substance is usually added to food stuff in the form of benzoate of soda, which is more soluble in water and which is speedily decomposed by the natural acid of the tomatoes.

The medicinal dose of benzoic acid as specified by the United States Pharmacopeia is 7½ grains and for benzoate of soda it is twice this amount, or 15 grains. It may be stated in this connection that it is a tendency of the United States Pharmacopeia to give the medicinal dose near the low limit rather than the high. The United States Dispensatory gives the dose of benzoic acid as 30 grains, and states that for benzoate of soda from 60 to 120 grains may be given in divided doses during the day. In this connection, it will be of interest to compare the dose of essential oils, fluid extract of capsicum and acetic acid (vinegar) with that of benzoic acid and benzoate of soda. The medicinal doses as given by the United States Pharmacopeia are as follows:

For cloves, 4 grains each; for coriander, nutmeg and black pepper, 7½ grains each; for allspice and caraway, 15 grains, while for the essen-

tial oils of these aromatics the dose for oil of cloves, caraway, coriander, nutmeg and allspice is 3 minims, or practically 3 grains, while the dose of cinnamon is less than one grain. The dose of the fluid extract of capsicum is also less than one grain. It will at once be seen that the dose of all these substances is very much less than that of either benzoic acid or benzoate of soda. The dose of dilute acetic acid containing only 6 per cent. by weight of acetic acid is 30 drops, or practically 30 grains. When we calculate this to the actual amount of acetic acid which is present in this diluted acetic acid we have practically 2 grains as the dose of pure acetic acid, and the precautions are always given in books in prescribing this medicine that it should be diluted with water, and the pure acetic acid sold by the drug store must bear the red label of the skull and cross bones and be marked "poison." The maximum dose of benzoic acid is given in the Pharmacopeia as nearly four times as great as that of acetic acid.

Now, as to the preserving action of acetic acid, Sternberg states that a solution of one part of glacial acetic acid to 300 destroys the cholera spirillum in one-half hour. In the proportion of 0.25 per cent. it restrains the growth of typhoid bacillus and in 0.3 per cent. destroys its vitality after three hours' exposure. And, on the strength of another authority, he states that the cholera spirillum fails to grow in the presence of 0.132 per cent., and is destroyed by 0.2 per cent. acetic acid. From the data given in this work the antiseptic properties of acetic acid are found to be greater than those of boric acid and salicylic acid and one-third as great as benzoic acid. From the formula used by some large manufacturers of catsup we are enabled to calculate that the amount of acetic acid added is somewhat in excess of 1 per cent. of the finished product. It is well recognized that there are some acid-resisting bacteria that will grow even in the presence of much acetic acid, and to completely preserve the catsup it is necessary to add other antiseptic substances. A person consuming an ounce of catsup containing this amount of acetic acid would receive practically 4.6 grains of pure acetic acid, or more than twice the medicinal dose as given in the United States Pharmacopeia, whereas if he were using an ounce of catsup preserved with benzoic acid he would consume only one-twelfth of this amount of benzoic acid or practically 1/20 of the medicinal dose of this latter article. Taking the combined medicinal doses of the essential oils used in preparing catsup and necessary to complete the preservation of it, we find it necessary to use an amount of this substance only a little less than is required of the benzoic acid, notwithstanding that the medicinal dose of these substances, as has already been shown, is less than one-half, and in the case of the oil of cinnamon and the fluid extract of capsicum hardly more than 1/10 as great as the medicinal dose of benzoic acid.

A recent bulletin of the United States Department of Agriculture Bureau of Chemistry, Bulletin No. 119, recommended for publication by Dr. H. W. Wiley, Chief, gives results of experimental work carried on by Mr. A. W. Bitting, an inspector of the Bureau of Chemistry. This bulletin states that the regular catsup used in their experiments and evi-

dently recommended for manufacture, referred to the pulp of only ripe tomatoes to which was added granulated sugar, 80 grain distilled vinegar, table salt, onions, garlic, whole cinnamon, cloves, mace and ground cayenne pepper, and that other catsups were made in a similar manner by substituting for these whole aromatics the essential oils and also the acetic acid extracts from same to give the same strength as with ground spices. The bulletin does not give the amounts of these various ingredients that were used, but it does state on page 27 that each manufacturer must work out the quantities that could be used in his formula and still retain the character of his goods, implying that in the administration of the pure food law no exception will be taken to any quantity of these ingredients which the manufacturer might see fit to put in. It is stated further, on page 26, that with the increase in vinegar it is necessary to add sugar and slightly more spices to overcome the pungency of the acid and thus insure good flavor, and we might add, "good preserving." The authorities here do not appear to see any connection between that paragraph in the Pure Food Law, which states that an article shall be deemed to be adulterated "if it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed," nor to the Food Inspection Decision No. 66, which refers to the use of sugar in canned foods. In this bulletin attention is called to the clause just quoted, using it as a basis for restricting the use of sugar to sweeten canned corn and other vegetables. It is there stated that it is held "that the addition of sugar to a substance not naturally sweet, converting it into a substance which might seem naturally sweet, is justified if the label plainly indicates that this sweetening material is added."

The antiseptic properties of essential oils are thoroughly recognized by the medical profession and have been used by them in the treatment of diseases, especially in those cases where it is desired to check fermentation, as in case of flatulency. The essential oils of cloves and allspice contain large quantities of eugenol, and the United States Pharmacopeia states that the essential oil of cloves must contain not less than 80 per cent. and allspice not less than 65 per cent. of this same body. Eugenol, according to the United States Pharmacopeia, is an unsaturated aromatic phenol (carbolic acid) obtained from oil of cloves and other sources. It is a well-recognized antiseptic, and the United States Dispensatory states that it probably resembles carbolic acid in its physiologic action. Some authorities have gone so far as to assert that eugenol is a more powerful antiseptic than carbolic acid.

Oil of cinnamon contains much cinnamic aldehyd and may contain cinnamic acid. Cinnamic aldehyd is readily oxidized to cinnamic acid on exposure to air, a condition which very nearly always occurs when a bottle of catsup is opened and kept in the household. Cinnamic acid was at one time used largely in the treatment of tuberculosis. It is well known that the chemical formula of cinnamic acid is closely related to that of benzoic acid and cinnamic acid is prepared synthetically from benzoic aldehyde. Decomposition products of these two substances in the body are known to be practically identical and both produce hippuric acid. In

addition to this, it has been found that cinnamic acid has marked bactericidal properties, especially when used in connection with certain fruit acids, as tartaric acid. Powdered capsicum and fluid extract of capsicum are powerful irritants, and are always taken in very small doses.

It will be seen from the chemistry as I have outlined here, that spices, their essential oils and other preparations from them, vinegar, or the acid which it contains, which is now the one always specified in the Pharmacopeia for making medicinal preparations containing acetic acid, are all properly classed as chemicals, and the active principle of each bears a definite chemical formula. If there were in Nature substances from which benzoic acid could be obtained in sufficient quantity to be used in the preparation of catsup, it could as well be added in this form as in the form of the refined product as it is commonly obtained in the markets. The wide distribution of benzoic acid in foodstuffs and in the animal body is well established. It is found as benzoic acid and in the form of derivatives. In the vegetable kingdom, the family of the palms produces a natural exudation known as dragon's blood and is similar to the gum obtained from the benzoin tree. The family of grasses also contains this acid or its representatives. Benzoic acid has been identified in sweet vernal grass and has been found in the meadow soft grass. It is present in what the Germans call the Waldmeister, a plant which is used in the flavoring of certain beverages in the old country. It is found in the congener of our cranberry, the German preisselbeere which is used extensively as a relish in Germany. The preisselbeere, like the American cranberry, has a capacity for remaining in good condition for a relatively long time. Naegle was the first to call attention to the antiseptic properties of the substance contained in the preisselbeere. The American cranberry contains of benzoic acid, according to W. D. Bigelow of the United States Department of Agriculture, between 210 and 430 milligrams in 1 kilogram, or a trifle less than what is permitted in the preparation of catsup. It is also found in sweet clover and in the fruit known as St. John's bread, which is occasionally eaten by children in this country, but which serves as a more important article of diet in some oriental countries.

Cranberry sauce, which is the side dish at all Thanksgiving Day dinners, and is extensively used at other times of the year, is especially rich in benzoic acid. We consume considerably more benzoic acid at one meal partaking of cranberry sauce than we would obtain from the taking of catsup as catsup is usually eaten. It matters not what we eat, there are always present products which are changed into benzoic acid, and during the twenty-four hours probably 1 to 10 grains of benzoic acid is produced in the small intestine and is derived directly from the food which is consumed. The benzoic acid thus produced is dissolved and carried through the tissues of the body, finally reaching the kidney and eliminated as hippuric acid. The urine from the grass-eating animals is very rich in hippuric acid, whereas that of man is rich in urea. On account of the wide distribution of benzoic acid in both the vegetable and animal kingdom, it seems the height of absurdity to say that because 0.05

to 0.1 of 1 per cent. of benzoic acid when added to a product is poisonous because man in that case did the adding, whereas, on the other hand, if the benzoic acid or its derivatives exist naturally in the foodstuff, it is then considered harmless and the product in which it is eaten perfectly wholesome.

Catsup preserved by benzoic acid usually contains much less spices and vinegar, is far more wholesome and better for the well-being of man than the catsup made in the old-fashioned way, which was exceedingly spicy; or the new pure food catsup of to-day which is preserved either by an excess of spices and vinegar or by the use of essential oils, vinegar and fluid extract of capsicum. For my part, I would rather drink a pint of sweet catsup preserved by benzoic acid than I would two ounces of the so-called pure food catsup, and I am certain that if any disagreeable disturbances were manifested, it would be due to the malic acid naturally present in the tomato, and not to any benzoate. On the other hand, I am quite certain that the dose of the preservatives in the two ounces of the pure food catsup would produce more marked physiologic disturbance than would the benzoate that would be obtained from the pint of sweet catsup. These are all chemicals, no matter whether we eat the chemical in the form of powdered cloves, cinnamon and capsicum and vinegar, or in the form of the chemically purified product obtained from these. The only difference is that one is the crude and the other is the refined. Unfortunately, it is this latter fact which the poor buncoed American public has not been made to understand by those who have had selfish motives. I might add, that this buncombe has extended even to our own medical profession which recently condemned benzoate of soda and other preservatives in foodstuffs when there were probably not more than one or two in the entire assembly who understood the real purport of the resolution which they were passing, and this, too, in the face of the findings of the Referee Board, composed of some of the most able scientists in the country, who had been selected for their special qualifications to pass upon this subject and who had reported, as the result of careful investigations, that they find no harmful effect to come from the use of benzoate of soda, even in large doses, far in excess of any quantity that would ever be used in the preparation of food.

The report of the Referee Board was accepted and endorsed by the National Food and Dairy Commissioners, who were in convention in Denver, Aug. 24, 1909. The only condition which the opponents to the use of benzoic acid are still upholding, now that they have given up the deleterious claim, is that by the use of this product inferiority can be concealed and thereby deception practiced. Now, as a matter of fact, just the opposite is true. Benzoate of soda is an odorless and practically tasteless compound. I have made many experiments in the preservation of tomato pulp of all kinds and have found that rotten pulp can be preserved much more readily by the use of essential oils, spices and vinegar than by benzoic acid. That the benzoic acid will not cover up any of the odors produced from the decaying material, nor will it in any way change

the flavor. On the other hand, it is quite easy to disguise the flavor and odor of decaying tomatoes when the essential oils, spices and vinegar are properly used.

I have already stated that the benzoic acid catsup retains the delicate tomato flavor, whereas the essential oil and the fluid extract of capsicum catsup is mostly a flavor of spices and sour. Therefore, we see that benzoate will never disguise inferiority, whereas, by the old-fashined way, as mother used to make it, or by the more refined way where the active principles are used, inferiority can be easily covered up.

Professor Long also investigated this question as to whether or not inferiority could be disguised by the use of benzoic acid, and he found that this could not be done, but when working on the same rotten tomatoes and using vinegar and spices, he had no difficulty in disguising the inferiority, and he says: "Some of this was preserved with vinegar and spices, some with benzoic acid and some was left unmixed. The odor and taste of the last was bad. That with the benzoate essentially the same, while with the vinegar and spices a fair grade of commercial catsup was secured. A worse lot of raw material could not be imagined, yet the inferiority in the one batch of product was completely concealed by the use of the vinegar and spices, and this is a perfectly logical result."

In summing up this paper I wish to emphasize:

1. That benzoate and benzoic acid are medicinally less active than the others used in the preservation of food and that the benzoate is less active than the preservatives now used in making the pure food catsup, which it has been stated may be made without the use of chemicals.

2. By the use of benzoate and benzoic acid, the flavor of the article preserved is not lost nor can any inferiority of the product be disguised.

3. The flavor produced by vinegar and spices is wholly artificial and does not retain much of the natural flavor of the product that is preserved. By this it is easy to cover up inferiority and thereby deceive the consumer.

4. Changed conditions in economics have made it imperative for the manufacturer to prepare his food to reach the consumer in a sweet, wholesome and palatable state. Benzoate and benzoic acid for catsup does this far better and in a less injurious manner than the products that are now used and so extensively advertised in the manufacture of the pure food catsup.

It will readily be seen why I chose this subject and stated it in such a ludicrous sense, "The New Pure Food Catsup; or, When is a Chemical Not a Chemical?"

103 State Street.

THE PRESERVATION OF MEATS BY COLD STORAGE.*

PROF. H. S. GRINDLEY.
University of Illinois

The proper preservation of our food products from the time they leave the producer or manufacturer until the time they are required by the consumer is constantly becoming a more difficult and a more important problem as the quantitative and qualitative demands of our rapidly increasing urban population grow and the cost of living constantly and rapidly increases. This question of the proper preservation of food products is one of much interest and, indeed, of vital importance to the medical profession. It is also a topic of fundamental importance to the producer, to the consumer, and to the manufacturer.

The interest of this question to the medical profession centers mainly around the numerous questions relating to the proper nutrition of man in health and in disease, and to the conservation and the protection of the health of the people. Even casual observation and superficial study reveals the fact that as yet we have but little well-defined, exact, scientific knowledge of the numerous processes and activities which have to do with human nutrition. As yet practically nothing is known as to the important and vital problems involved in the proper economic and scientific nutrition of man. While we should properly appreciate and frankly acknowledge the fact that all of our scientific knowledge of nutrition is fragmentary, we should at the same time be grateful that it is rapidly increasing.

I was requested by your secretary to speak to you this evening upon one phase of the preservation of foods, namely, "The Preservation of Meats by Cold Storage." The investigations which have been made at the University of Illinois upon the effect of cold storage upon meats were begun in 1904 with the prime object of determining the character of the chemical changes which meats undergo when kept in cold storage. Investigations of this nature were necessary in order for us to continue researches upon the chemistry of flesh which were begun as far back as 1895. In the year 1904 it became necessary for us to undertake investigations to determine the influence of feed, of age, of breed, of sex and of other factors upon the chemical composition of the animal body. To do this it was desirable to examine the eleven wholesale cuts of the entire half-carcasses of beef. This could only be done economically and in an effective manner by keeping the carcasses of beef in cold storage for periods varying from four to sixty days at least. The question then immediately arose, will the cuts of beef kept in cold storage for 10, 20, 30 or 40 days or even longer undergo any chemical changes whatever? Our object was not merely to determine whether or not meats kept in cold storage underwent any changes that were detrimental to health, but to determine accurately by the most delicate means now at our disposal whether or not meats kept in cold storage underwent any chemical changes of any kind whatsoever, from any cause whatever.

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* Read in a Symposium on Pure Foods before the Chicago Medical Society, Nov. 10, 1909.

It should be clearly understood in the beginning that the meats which were placed in cold storage for our work came from animals which were killed, dressed and prepared for cold storage in the usual way, but under our own personal supervision. The meats thus prepared were immediately placed in cold storage under known conditions and constantly kept under such conditions until removed personally by ourselves and taken directly to the chemical laboratory for immediate examination. In other words, the meats were entirely fresh and as good as could be when placed in cold storage, and during their sojourn in cold storage they were kept constantly just as we desired; further, they were taken directly from cold storage to the chemical laboratory, there being no opportunity for changes from the time they left cold storage until used for our chemical examination.

Briefly stated, our investigations consisted of the following experiments:

1. The detailed chemical examination of four wholesale cuts of fresh beef from the left half of a one-and-one-half-year-old Hereford steer and of four wholesale cuts kept in cold storage for twenty-two days. These four cold storage cuts came from the right half of the same Hereford steer from which the four fresh cuts were taken from the left half.

2. The detailed chemical examination of two wholesale cuts of fresh beef from the left side of a one-year-old Durham steer and of two wholesale cuts kept in cold storage for forty-three days. The two cold storage cuts came from the right half of the same Durham steer from which the two fresh cuts were taken from the left half.

3. Cold storage, frozen, drawn poultry was compared with undrawn fowl similarly prepared and kept, and, further, fresh unstored poultry was compared with drawn and undrawn frozen fowl. In this connection the detailed chemical examinations of one sample of fresh chicken, two samples of undrawn cold storage chicken and two samples of drawn cold storage chicken were made. Nothing was known as to the kind of poultry, or as to their feed. The chickens were killed, dressed and packed for cold storage by a large wholesale firm in Chicago, under my direction and continuous supervision. The same day that the poultry was killed and dressed it was placed in one of the large cold storage warehouses in Chicago and immediately frozen. The poultry was maintained at a temperature of 10° F. during storage. The fact should be noted that the supply of poultry used in our investigation was immediately placed in cold storage after it was killed and dressed. In other words, the dressed poultry was not allowed to stand, nor was it shipped from outlying districts after being killed and before being placed in storage.

4. In connection with this investigation upon the influence of cold storage upon uncooked beef and poultry, it was thought that it would be of economic and scientific interest to make several cooking experiments upon some of the fresh and refrigerated uncooked samples and thereby to ascertain what influence, if any, the cooked meats might show over the uncooked, as to changes brought about during cold storage. It could easily be assumed that the process of refrigeration would produce not

only chemical but also physical changes in the meats which might not be apparent upon simply analyzing the uncooked product, but would be brought out more distinctly by analyzing the cooked samples and the resulting broths and drippings. With this object in view, both boiling and roasting experiments were made upon portions of the same samples of the uncooked loin cuts. In this connection the detailed chemical examination of eight samples of cooked meat and eight samples of broth and drippings resulting from the boiling and the roasting were made.

Even if it were desirable, it would be impossible to give this evening, in detail, the complete data of this investigation or to discuss in detail the results which have been obtained. If there is anyone present who would care to study the detailed data and the discussion of the same in full, they will find them in *The Journal of Industrial and Engineering Chemistry*, vol. i, pages 413 to 436 and 580 to 597. I also have here a few reprints which may be passed around for inspection. I have placed a brief index upon the covers which will assist you in finding the most essential tables.

I now desire to state briefly but clearly the facts which this investigation, together with the study of other investigators in this field, have taught regarding the topic under discussion.

1. Theories and mere statements unaccompanied by experimental data or facts upon the effect and value of cold storage upon meats are numerous, but accurate and scientific studies of the various aspects of the problem have so far been comparatively few. In such matters as this which relate to conditions which may or may not fundamentally affect the health of our people, it is more than useless, in fact it is an injustice to the consumer, the producer, and the manufacturer, to express upon either side of the question mere personal opinions unaccompanied by experimental data. It is necessary in such questions to very carefully distinguish between mere circumstantial evidence which is worthless and direct experimental evidence which is of untold value in this connection. In other words, we should be influenced only by the exact facts in the case, by the true findings of careful study of the entire question.

2. Thorough, accurate and exhaustive chemical investigations in this country by Wiley and Pennington and their associates, and Richardson and Scherubel, and Emmett and Grindley, have demonstrated without doubt that properly cold storage meats are as nutritive as fresh meats, considered from the standpoint of their chemical composition, and that meats kept in cold storage under proper conditions undergo at most only very slight chemical changes. The work of Rideal in England, of Gautier in France, and of Mai, Grassman and Müller in Germany fully agree with the work of the above-mentioned American investigators.

In fact, so far as I have been able to find, there have been no chemical studies made upon this subject which in any way contradicts the above conclusions. In other words, the records of all investigations so far made upon this subject leads to the conclusion that properly refrigerated meats are as nutritive and healthful as fresh meats, judging from the chemical composition, the digestibility and the cooking qualities of the

same as determined by the exact, accurate, experimental findings of the science of chemistry. I think it is not necessary from now on to make mere chemical investigations alone and by themselves, to determine the effect of cold storage upon flesh. Of course, it will be desirable and necessary to make careful chemical studies in connection with the bacteriologic and nutritional investigations which are still very necessary in this connection.

3. It is not as yet easy to draw well-defined, definite conclusions from the bacteriologic work which has been done in this connection. The careful and exhaustive work of W. F. Boas, M.D., of the Massachusetts State Board of Health, conclusively demonstrates that ptomaines or toxic principles are not produced in either drawn or undrawn poultry during proper cold storage. Dr. Pennington of the Bureau of Chemistry of the U. S. Department of Agriculture, in her investigations, has found positive evidence of bacterial growth during the storage period. The reduced temperature retarded the growth of the bacteria, but it did not destroy the organisms. The bacterial study of poultry gave evidence of the presence of an appreciable number of bacteria in the edible stored flesh, but none in the fresh samples. Richardson and Scherubel, in bacteriologic work, found that in the freezing of the meat the bacteria became surrounded by solid barriers of ice through which they could not penetrate and hence they cease to grow. In their chemical work there appeared to be no general tendency for the ammoniacal, the coagulable, or the albumose nitrogen to increase or decrease, and hence chemically the products of bacterial growth, if there were any, were inappreciable.

Further, bacteriologic investigations in a study of the influence of cold storage upon meats are needed. However, I understand that the Bureau of Chemistry of the U. S. Department of Agriculture has made during the last two or three years extensive investigations in this field, and it is more than probable that the publication of the results of this Bureau will give the data necessary to clear up the somewhat contradictory and negative results now on record as to the bacteriologic questions relating to the preservation of meats by cold storage.

4. There should be high-grade inspection of cold storage products, as all other food products, before they reach the consumer. To-day it is evident to all that it is undoubtedly necessary that food products of all kinds should be subject to thorough, careful, intelligent and proper inspection before they reach the table of the consumer.

5. Other investigations are much needed in order to definitely and beyond doubt prove whether cold storage meats are or are not as healthful, nutritive and hygienic as fresh meats. I am convinced that the best method of definitely and conclusively arriving at information of direct value upon the question of the nutritive and hygienic condition of meats and other food products after various periods of holding in cold storage under the usual commercial methods, in a practical and scientific manner, is the determination of the influence of such cold storage products upon the normal health, strength and vigor of healthy men, when these products are consumed in considerable quantities for a somewhat

extended period. Such determinations can be made with exact scientific accuracy and under conditions which would have been a very close approximation to the ordinary, actual, normal conditions attending the consumption of cold storage products.

Briefly stated, the methods which would be followed in such an experiment are as follows: A group of twenty-four able-bodied men would be selected as subjects of the experiment which would extend over a period of ten to twelve months at least. The men forming the squad would be housed and boarded under conditions quite similar to those of a well-organized club or fraternity. In all cases the foods would be served in the usual manner and in their usual conditions, but each kind of food would be weighed and served individually to each member of the club. A varied and mixed diet, consisting of fruits, cereals, vegetables, soups, meats, bread, milk, butter, etc., would be supplied the members of the club. After preliminary tests, the squad of twenty-four men would be divided into two groups, each group consisting of twelve individuals. Group I would be given the ordinary diet mentioned above, but the members of this group would be served fresh meats exclusively. Group II would be given exactly the same diet as mentioned above in Group I except that members of this group would be served cold storage meats either exclusively or in part. A very complete daily record of the physical condition of these two groups of men would be kept. Thoroughly competent physicians would keep daily records of the physical condition and the health of each individual of the squad. At the same time all liquid and solid excreta from each individual of the squad would be accurately weighed and completely and exhaustively examined chemically, microscopically, clinically, and bacteriologically.

A thoroughly devised and planned investigation along the lines above indicated which was conducted in a careful, exhaustive, practical and scientific manner in all details would lead to results of a conclusive and final character as to the nutritive value and the sanitary condition of meats after various periods of holding in cold storage under the usual commercial methods.

However, there should be carried on, hand in hand with the above line of investigation, thorough, painstaking and elaborate studies in the following lines relating to the subject:

1. A thorough study of the nature, the number, and the kind of bacteria which are found in cold storage meat products as compared with the nature, the number, and the character of the bacteria which are found in similar fresh products as they are offered for sale upon the open market under the usual and normal conditions.

2. The same researches would include a thorough and exhaustive research to demonstrate clearly by the most improved, scientific and practical methods known to-day, whether or not proper cold storage food products under any conditions contain decomposition products of a ptomaine nature.

3. In this connection, thoroughly planned and devised researches should be undertaken along practical and scientific lines to experimen-

tally demonstrate unmistakably to all the most suitable conditions of temperature, time, the proper methods of preparation for storage and the best and most economical methods to use in order to give the best possible results as to the healthfulness, nutritive value, palatability, flavor, and digestibility of the various meat products which have been preserved by cold storage.

THE ENACTMENT OF FOOD LAWS, THEIR ENFORCEMENT AND EFFECT.*

THOMAS E. LANNEN, ESQ.
CHICAGO.

The subject of food laws, and their enforcement and effect, is one of such a scope and magnitude that it is very hard to confine a paper like this to any reasonable bounds and cover the field, even in part. It is a matter in which one is not troubled so much for something to say as troubled about what to say out of all that might be said. I shall try to cover briefly the salient points of the subject.

The food laws of the several states are passed by the state legislatures in the exercise of the police powers of the states. The police power of a state may be said to be the power of a state to legislate for the benefit of the public, and more particularly for the protection of public health, public morals or public safety. The police power of a state is one of the broadest powers it has. It is a power that cannot be definitely defined, and about the only limit that can be fixed for it is a limit of reasonableness. The constitution of the United States provides that no person shall be deprived of life, liberty or property without due process of law, but anything that is done by a reasonable exercise of the police powers of a state is done by due process of law. It is that great power of a state under which the rights of the individual must be surrendered for the benefit of the public welfare to the fullest extent consistent with reason, and the reasonableness may generally be determined by the necessity for the exercise of the power in whatever way it is exercised.

When we stop to consider these facts seriously, and consider that the state in passing and enforcing food laws is frequently encroaching on the rights, both personal rights and property rights, of the private citizen, for the benefit of the public, and without compensation or reward other than that a citizen may derive by being a part of the public, we can at once see how important and just it is that there be a real and not a fancied necessity for the exercise of this great power. We can also see how necessary it is that the men charged with the enforcement of such laws, and in whom is reposed by the public very great discretionary powers, shall be men of a broad caliber and men who carry around in their breasts a deep-seated love and thorough respect for the republican

* Read in a Symposium on Pure Foods before the Chicago Medical Society, Nov. 10, 1909.

form of government under which we live. Indeed, it is even necessary that they understand our form of government, and always remember that if you destroy the private citizens of this country there will be no public left.

We boast of our private rights in America, and justly so. It is one of the few countries on the face of the earth where even the executive head, even in public affairs, says "I" and "My;" but there are officials in our land to-day who have so far absorbed all that is public that I wonder often if they would not prefer to say "We" and "Our" in speaking of themselves.

In addition to the state food laws we have the National Food Law. But while the state food laws are passed as stated, under the police powers of the several states, the National Food Law is passed under a different power, namely, the power to regulate interstate commerce among the several states. Theoretically, and I believe strictly legally, the protection of the public health, public safety or public morals has nothing whatever to do with, and no connection with, the power of Congress to pass or the power of the government to enforce the National Food Law, and that law is simply a cold-blooded regulation of interstate commerce, and is valid, if at all, simply because Congress has the right to regulate interstate commerce for some given reason, or without giving any reason at all. The protection of the public health, public safety or public morals cannot be given as a reason for the validity of the National Food Law, because the people live in the several states and each state has the exclusive power to, and does, protect its own public health, public safety and public morals in accordance with the will of the people living in each state. Nobody lives in interstate commerce, it is simply a name given to that business which is transacted among the several states; consequently there is no public health, public morals or public safety to protect in interstate commerce. Furthermore, the government of the United States has no general police power, and it has no unwritten law, but acts entirely by statutory law; while the States proceed not only by statutory law, but also sometimes by unwritten law, which is commonly called the common law. In addition, the states have general police powers.

We have, therefore, two classes of food laws; that is to say the state food laws and the National Food Law.

A state food law applies to and regulates the manufacture and sale of all food products produced or sold within that state. It has no force or effect beyond the boundary line of the state.

The National Food Law applies to the manufacture and sale of food produced or sold in the District of Columbia and the territories of the United States to the same extent that a state law applies within a state. And in addition to this, broadly speaking, it applies to all foods shipped in interstate commerce or shipped in from a foreign country.

Every state in the Union has a food law, and there is some one charged with its enforcement and actively enforcing it in practically every one of the states.

Let us now consider for a moment what the food manufacturer has to contend with. I mean particularly the manufacturer who does business in a number of states, and nowadays all large food manufacturers do more or less business in practically all of the states. The laws of the several states are not uniform; that is to say, the laws of one state will not harmonize, in many instances, with the laws of the rest of the states; and sometimes the law of one state will not harmonize with the laws of the rest of the states or with the National Law.

Let us consider the position of a food manufacturer living in Chicago and doing business in a number of the states, or in all of the states. Let us suppose that he sells a carload of food to a wholesale grocer in the State of Iowa. That wholesale grocer is going to sell that food to retail grocers in Iowa and in the states surrounding Iowa. The Chicago manufacturer must first consider the National Law, because unless his goods comply with the National Law he cannot ship them to the wholesale grocer in Iowa. Having studied the National Law and determined how to manufacture and label his goods so that he can legally ship them from Chicago to Iowa, he must then consider the state food law of Iowa, because some of the goods will be sold in Iowa, under the Iowa food law, and if they are not legal under that food law the man selling them will be arrested and fined and he will come back on the Chicago manufacturer. Then the Chicago manufacturer, having determined how to make his goods and label them so that they will be legal to ship to Iowa, and legal to sell there, must then begin to consider the laws of the states surrounding Iowa, because the wholesale grocer in Iowa has an established trade in Minnesota, North and South Dakota, Nebraska, Kansas and Missouri. His trade may even extend into other states, but the manufacturer must at least figure that his trade extends into the surrounding states. Now let us see what he finds himself confronted with:

He finds that he can make an article of food that, under the National Food Law, is perfectly wholesome and legal and legally labeled, and which will also be deemed wholesome and legally labeled in the State of Iowa, and, in so far as those laws are concerned, will be held to be legal and pure in every respect. But this article of food may contain a coal-tar color, and, while it is deemed pure and wholesome while it is being shipped to Iowa, and as long as it remains in the State of Iowa, the moment that article of food crosses the line of Iowa and gets into Minnesota that harmless coal-tar color is deemed a poison and the food is held to be illegal and unwholesome in Minnesota and cannot be sold in that state. Or if it happens to stray into North Dakota the laws of that state transform the harmless color into a harmful one and it cannot be sold in North Dakota. But if it happened to get into South Dakota, or Nebraska, or Missouri, or Kansas, the color would still remain wholesome and the food would be held legal in those states in so far as the color is concerned. But let us consider that article of food in another respect. It may be a syrup and may not bear any statement of its weight or measure. Now, in so far as the National Food Law and the law of Iowa are concerned, it is a legal article of food. So, too, will it be legal if it gets

into Minnesota or South Dakota, or Missouri, or Kansas. But if it gets into Nebraska or North Dakota it will be illegal because it contains no statement of weight or measure. Or let us suppose that this article of food contains a small amount of benzoate of soda. In so far as the National Law is concerned it is wholesome and may be shipped. It is also wholesome in Iowa and may be sold there. It will still remain wholesome if it strays into Missouri, or into Nebraska, or into Kansas or into South Dakota. It seems the climates of those states will not affect the benzoate so as to make it injurious, and the laws of those states are not worded in such a way as to work a transformation of the benzoate and make it unwholesome in those states. If it gets into North Dakota and Minnesota it is not injurious to health simply because it happens to be in those states, or because of the laws of those states, but it depends upon what the article of food is. If the benzoate happens to be in a catsup or in crushed fruits for soda fountains in Minnesota it seems it is not injurious to health, but if it happens to be in a sweet pickle or anything else it seems it is, so that in Minnesota it seems the question as to whether the benzoate of soda is injurious or not must be determined by the identity of the food. The law itself does not make benzoate of soda injurious to health, or say that it is, in Minnesota. Neither does it say that it is not injurious to health in any article of food. But it says that anything which is injurious to health cannot be used in food. Therefore when we find that it is permissible to use it only in catsups and crushed foods for soda fountains the only conclusion we can reach is that it is not injurious to health when used in catsups and crushed fruits, provided, of course, the crushed fruits are going to be used at soda fountains. If the crushed fruits are going to be used anywhere else, or for any other purpose, the benzoate thereby evidently becomes injurious to health. And if it is used in any other foods it is injurious. We find practically the same condition of affairs in North Dakota. And, in passing, we might say that it seems this benzoate of soda is going to be injurious to health in Minnesota after Dec. 1, 1910, in the products in which it is not now injurious to health.

This is simply an illustration of some of the conditions that must be considered in shipping from Chicago to Iowa. There are many other points that I might raise in regard to such a shipment. The same conditions or others just as bad have to be considered in shipping food to any part of the United States. A manufacturer may ship to some part of the country where he will not be confronted with the preservative question or the color question, but still he may be up against the labeling question or some other one. It may be the size of the type or the form of his label or some other technicality. There is no assurance whatever that because a label is legal under the National Food Law that it will be legal in all the states; or because it is legal in one state that it will be legal in any other.

With this condition of affairs existing it becomes necessary for a food manufacturer who does business in all the states, or any number of them, to either become familiar with these laws himself, or employ an

expert who is familiar with these laws. This expert must be just as familiar with the food law of one state as with the food law of another, and he must have the whole food law situation of the United States in hand. He must, in addition to knowing what the law really means, know what the particular food commissioner of any state thinks the law means, because the commissioner is going to inform the trade of that state that the law means what he thinks it means, and if a manufacturer ships goods into that state that do not comply with the food commissioner's interpretation of the law of that state those goods will be singled out for attack and the manufacturer's trade will be intimidated until they refuse to handle the goods or until the manufacturer goes into the state and forces the issue with the commissioner and gets a court decision that will settle the point. Even then there will be a prejudice against his goods. In passing on labels for the various states a man must have a practical knowledge of food chemistry and conditions surrounding the manufacture of food, as well as the laws of the state, and he must also be familiar with trade conditions and customs. He must not only be an expert in interpreting the food laws of all of the states of the Union applying to foods and drinks, but he must also have a practical knowledge of the manufacture and composition of not one food, or one drink, but of all foods and all drinks. He must be, in other words, a sort of walking encyclopedia on everything that pertains to food and drink. And even with all this knowledge he is a very expert expert who can advise a food manufacturer how to sell articles of food in all of the states and have that food legal in all of the states and keep the food manufacturer out of trouble.

The food manufacturer nowadays is not only confronted with the question of how to label his product, and the question of what ingredients are injurious to health and what ones are not, but he is also confronted with the question of standards. The Secretary of Agriculture of the United States has promulgated a set of standards for food products as the official standards of the United States. These standards have not been incorporated into the National Food Law, nor have they been made legal standards by any act of Congress. By legal standards I mean standards that food manufacturers must, under penalty of law, abide by in manufacturing and labeling their food. The standards have simply been promulgated as the official standards of the United States, but the force and effect of the same has not yet been defined or established. About all we can say for them, in this respect, is that they are in existence. They were formulated by a committee of chemists. They are in many particulars wholly arbitrary standards; that is, they represent what the chemists formulating them thought the standards ought to be, regardless in many instances, of what the standards actually existing are and were when they formulated these standards. I regret that I have not the time to go into the history of these standards. In so far as the National Law is concerned, these standards are frequently referred to by the government officials and manufacturers are warned that their goods must conform to these standards, but the courts have already held that

these standards have no binding effect in law, in so far as the enforcement of the National Food Law is concerned.

But some of the state food officials seem to think that these standards have more force and effect in the several states than they have under the National Food Law. And here, again, is where the food manufacturer comes in for a world of trouble. There is only one state that I know of in which the legislature has legally adopted these standards, but nevertheless the food commissioners of a great number of states have boldly published these standards as the law in those states. This usually comes about in the following manner: The act creating a food commissioner's office in a state usually contains a proviso that the food commissioner of the state shall have power to make uniform rules and regulations to enforce the provisions of the food law. The food commissioner immediately proceeds to interpret this power to mean that he has the power to make new laws without consulting the legislature, or anybody else. Then he says in effect: "I rule that the standards promulgated by the Secretary of Agriculture as the official standards for the United States are the food standards for this state." And *ipso facto* these standards are the law in that state, in his opinion. Then the manufacturer must either reckon with the standards thus established, without any warrant of law, and having in fact absolutely no legal effect any more than a circus poster on a bill board, or get into trouble and be in continual trouble until he comes around to looking at matters in the way the food commissioner does.

I do not wish to be understood as throwing mud at all food officials. I am simply here stating the facts, and any food commissioner whom this cap will fit is welcome to wear it. A great many other so-called food laws are created in this way.

Fortunately, however, some of the food officials know their rights, and know a citizen's rights, and some of them enforce their laws along broad and reasonable lines. This is especially true of Illinois. I do not believe any food manufacturer can complain of unreasonable treatment in this state, and yet I know it to be a fact that the food sold in Illinois to-day is as properly labeled and as wholesome as in any state in the Union.

There is another phase of food laws that I cannot pass and do justice to this subject, and that is their changeableness and the great injustice that is done to food manufacturers on account of the same. One of the great principles of our government, and one on which we pride ourselves a great deal, is that no man's property shall be taken and confiscated without due process of law or without compensation. But this great principle does not hold good, or at least it holds by the barest thread, when applied to the food industry of America. A food manufacturer, under laws existing, may invest a million dollars in manufacturing food, and manufacture food legal in every respect under the laws of the state in which he does business and under the laws of most of the other states. The state legislature will then pass a law that will render every pound of that food illegal. The manufacturer finds that to-day he is doing a

legal business valued at a million dollars; to-morrow he wakes up and finds that his million dollars is invested in an illegal business, and he cannot sell a pound of his food. Since the 1st of January, last year, until the 1st of June of this year, about 42 state legislatures were in session, and over 500 food laws were introduced in those 42 legislatures. A great many of those food laws proposed to make some of the food, then legal in those states, illegal, and I dare say that not more than three or four of those laws made any provision at all for the disposition of such foods then on the market and legal at that time under existing laws regulating the manufacture and sale of those foods. It is easy to see where such summary action would be justifiable in dealing with foods actually poisonous or detrimental to the public health, but I dare say that there was no emergency existing for the immediate passage and enforcement of a single one of those 500 laws, and there was no just reason why all of such food in existence at the time, and legal under existing laws, should not have been permitted to be legally sold and disposed of, instead of being practically confiscated by legislation making it illegal.

Every year this sort of thing happens, and manufacturers are forced to lose hundreds of thousands of dollars simply because some official decides that the food law of to-day is not good enough to be the food law of to-morrow. Sometimes a mere technical change in a food law in a state will serve to render a great deal of the food then in the state illegal and it must be changed or relabeled before being sold. All this loss tends to and does increase the price of food.

Right here I might say that the public has a very wrong impression of adulterated and misbranded food. The public has been led to believe that adulterated food is unwholesome food, or at least not fit to eat, while, as a matter of fact, this is seldom if ever true. The great bulk of food cases and prosecutions are occasioned on account of labeling, more than anything else. Practically all of the food that is condemned as illegal could be made legal by labeling, except in those states expressly prohibiting the use of certain ingredients.

There has been a great deal said on the food subject on behalf of the public, but if the public knew the actual facts it would concede a whole lot to the manufacturer. And it must be remembered that the great bulk of these food laws do not emanate from the public. They are usually drafted in some food official's office and embody his ideas and not the public's; and are sometimes, even frequently, lobbied through a legislature by the officials who will hold jobs under them and enforce them, but who will not admit that they are lobbyists even under laws requiring any lobbyist to register as such.

There seems no just reason why an article of food that is legally labeled and legal in every respect under the National Food Law, and approved by the government of the United States, should not be legal in any state of the Union, and be permitted to circulate as freely throughout this land as the coin of the realm on which the government has put its stamp.

The ideal kind of a National Food Law is that kind only which would have the effect of making food shipped under it, and legal under it, legal anywhere. But the present law does not do this. It cannot affect the actions of the states, except to a limited extent. And it is hardly possible that any National Food Law could control the actions of the states in passing food laws.

Neither does it seem reasonable that an article of food that is not injurious to health in the state of Illinois should be injurious to health in the state of Wisconsin, just across the line. As a matter of fact, if a product is not injurious to health in the state of Illinois it is not injurious to health anywhere, and if it is injurious to health in Illinois it is injurious to health anywhere. If there is any doubt about the wholesomeness of any article of food, and the United States government says it is wholesome and the majority of the states say that it is wholesome, certainly the presumption should be in favor of its wholesomeness until better light is had on the question. The argument being made about resolving the doubt as to the wholesomeness of certain things in favor of the public is hardly a good argument in the absence of any evidence of positive harm. The world is full of doubters, on all subjects, even on all matters that affect the public good, and it hardly seems fair to ask the world to stand still until we investigate everything about which there is a doubt, but which shows no particular evidence of guilt or harm.

FLOUR BLEACHING; ITS RELATION TO BREAD PRODUCTION AND NUTRITION.*

GEORGE L. TELLER, M.S.
CHICAGO.

The paper which I am reading is an abstract of an article prepared by Dr. Wesener and myself, and published in the *Journal of Industrial and Engineering Chemistry,* vol. i, No. 10, October, 1909.

From an early date in the production of wheat flour the bleaching of the color has been practiced by millers before putting their product upon the market. Up to within the last decade the method employed was to store the flour for a period of several months, whereby the more or less marked yellow color of the flour was removed. This change in color was brought about not only by the direct action of the oxygen of the air, but also by the action of nitrogen oxids which are known to be produced in the air by electricity, as during thunder storms.

Not many years ago, a Frenchman discovered that the gas produced by discharges of electricity were capable of whitening the flour. He did not explain properly the cause of this whitening, but attributed it to the production of ozone (which it is now known does not readily bleach flour). It remained for two Englishmen by the name of Andrews to

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discover that the bleaching was brought about by the action of certain oxids of nitrogen which are produced when nitric acid is brought in contact with a reducing agent, such as ferrous sulphate. Numerous processes have been brought forth for applying this principle to practical bleaching of flour in the mill. The process which has up to the present time gained the greatest ascendency in this country is what is known as the Alsop process, where air is pumped through a chamber in which a flaming electric arc is discharging. It can readily be shown that the air discharged from the pump contains small quantities of oxids of nitrogen which are in less quantities a natural constituent of the air and are essentially similar to the oxids of nitrogen produced by the natural discharge of electricity during thunder storms, and also result from the action of nitric acid upon reducing agents. Of more recent times the use of nitrosyl chlorid has been introduced into the art of flour bleaching, and possesses advantages over the oxids of nitrogen in the character of the bleach which it produces as well as in the simplicity of application to the flour. This gas can readily be liquefied and bought in small bulk for conveniences of transportation and storage. The pressure is ideal for the purpose, being at normal temperature from 15 to 20 pounds to the square inch. This pressure is an important point, and it materially aids in the methods of applying same to the flour.

The chemistry involved in the bleaching of flour has received much attention by us. We have isolated the coloring matter and have identified it, or at least have established a very close relationship for it with other natural vegetable colors. It is not the province of this article to go into this phase of the question. The chemistry of this reaction will be taken up by us in a later article. The color of the flour which is removed by the bleaching process is distributed throughout the entire flour-producing portion of the wheat berry, but is more abundant in the portion nearest to the bran, which is also the most nutritious. It is the purpose of the bleaching process to remove the yellow color instantly, instead of by the old process of storing for weeks and months. It should be clearly borne in mind in this connection that the yellow color which is removed by the bleaching process is entirely independent of any dark or inferior color produced by the presence of the bran which is ground up with the lower grades of flour. The coloring matter of flour is the one material in the flour which shows the greatest avidity for uniting with the gases which are used in bleaching. The action on the coloring matter is instantaneous, and the amount required for the purpose of bleaching the flour is very minute. If an excess of the gas is used, it will eventually combine with other substances, primarily the gluten and finally the oil. It is only when the flour is overbleached and ruined that the action on these constituents of the flour is sufficient for it to be detected either by chemical or by physical properties. It was conceded in the flour-bleaching case conducted in North Dakota, as well as at the hearing in Washington, D. C., that the average amount of nitrite reacting nitrogen in commercially bleached flours is practically one part per million. In our own experiments we have often found much less than

this amount. It has been still further conceded on the part of even those opposed to the bleaching of flour that only a small proportion, and in some instances not any, of the nitrite reacting nitrogen is present in the bread. We have in our own experiments conclusively shown the cause for this disappearance of nitrite reacting nitrogen, and have found it to be due in a large measure to the action of the yeast which is used in the production of the bread, the nitrite being consumed by the yeast and bacteria. In accordance with the facts well recognized by bacteriologists, nitrites form an excellent food for bacteria.

The nitrite reacting material of flours is also removed by the action of heat. Quantities of bleached spring wheat patent flour were dried over night, and in the morning examination for nitrites was made in the usual way. Where the flour was dried at a temperature of 221 F., all of the nitrite reacting nitrogen disappeared. At a temperature of 169 F. it was reduced from 0.37 to 0.22 parts per million. At a temperature of 104 F. no change took place. When the flour was made into a soft dough with water and allowed to ferment over night at a temperature of about 100 F., all of the nitrite reacting nitrogen disappeared. The same was true when 1 gram and 2 grams of yeast were added to the flour in making the sponge. When, however, chloroform was added to stop the action of yeast and bacteria, the nitrites remained as in the original flour. In other experiments it was found that no change took place in a sponge made directly from flour without the addition of yeast when kept over night at ordinary room temperature. Better action took place, however, when 1 and 2 grams of yeast were added to the sponge. There was then a reduction from 0.37 to 0.018 parts per million. In these latter experiments the nitrite reacting nitrogen would have all disappeared had the correct incubating temperature been used, except when chloroform was added. From the results of these experiments we see that drying at sufficiently high temperature dispels all of the nitrite reacting nitrogen; that the bacteria in the flour when given sufficient water in the making of a dough and kept at suitable temperature have the property of utilizing this nitrite reacting nitrogen for their own growth, either changing such product to nitrates or ammonia or even building such nitrogen compounds into more complex organic nitrogen compounds for its own economy.

That the presence of even considerable amounts of nitrite reacting nitrogen in flour acts favorably to the development of yeast dough and not as a preservative is apparent from experiments made by adding nitrite of soda in varying quantities to a sponge dough made with yeast and allowing the same to ferment at a proper temperature for its development. No effect injurious to the expansion of the dough was apparent when a quantity of nitrite reacting nitrogen is added to the flour in quantities two hundred times as great as is present in commercially bleached flour. On the other hand, this larger amount was found to be beneficial to such expansion. It was also found that when bleaching gases were added to the flour sufficient to produce nitrite reacting nitrogen to the extent of 60 parts per million, the flour was entirely destroyed

for commercial purposes, because of the well-known xanthoproteic reaction whereby the flour was highly discolored, producing a reddish yellow shade, and because the character of the gluten was changed by the action of this large amount of acid-producing gases upon the gluten. Even in this aggravated condition the growth of the yeast was not prevented, and the bread-making property of the flour was not destroyed, although the bread was of inferior quality. Attention should be called to the fact that, in the experiment noted above, sodium nitrite was used, while in the gas-treated flour the sodium was not added, the acid in this case being in part at least united with the gluten, forming with it the well-known class of syntonin bodies. It is known that bodies of this character are continually formed during the process of breadmaking by yeast, and are an essential step in such process of breadmaking.

We have been making daily examinations of flour received from all parts of the United States and from foreign countries, including Canada, England and South America. This has naturally brought us in contact with flours of all kinds, from all classes of wheat, and representing all methods of milling. This work has been done for the purpose of ascertaining the breadmaking and commercial values of these flours. During the last five years probably 90 per cent. of the flours which we have received have been bleached, and we have not in a single instance found any flour which appeared to be in any way injured by the process of bleaching. The analyses which we make of these flours is very thorough, as the commercial value which depends on the quality of the bread is based on our reports. In addition to this general analytical work on flours, we have made a very thorough and exhaustive study of the same flours, bleached and unbleached, to determine any defects which might have been produced by the action of the bleaching gases upon the bread-making qualities of the flour. We have found that in every instance the only essential change in the character of the flour was in a whitening of the color, and in some instances an increase of the water-absorbing capacity of the flour.

Where there has been any slight difference in the volume of the bread which could not be attributed to natural variation in the work, it has been if anything slightly in favor of the bleached flour. The same is true of the number of loaves of bread which are produced from a barrel of flour. The amount of yeast necessary for the production of bread from bleached flour, which we call the fermenting period, was in no way increased over that required for the unbleached flour. The quality of the gluten as shown by its capacity for expanding into a good-sized loaf of bread has not been found to be in any manner injured. The average value, which in our report is based upon the color of the flour, the character of the bread, the amount of bread and the size of the loaf, was a little higher for the bleached flour than for the unbleached, because the color of the flour and the color and quality of the bread were improved. The flavor of bread is subject to much variation, due to the methods of bread-making, and is also one of the most difficult points to determine in the comparison of breads under examination. We have made careful com-

parisons along this line and have been unable to detect any deterioration of flavor when both flours, bleached and unbleached, were submitted to the same process of breadmaking.

The patent-flour as compared with the clear is relatively deficient in protein, fat and mineral matter, and for this reason possesses less nutritive value than the clear flour. When these two flours are combined they constitute the straight-grade flour, which is intermediate in character between the patent and the clear, and possess most of the advantages of the former without the disadvantages of the latter. Though less costly to produce than a patent flour, the straight grade possesses, except as to color, all the essential qualities of the patent as an article of food. While an experienced eye can readily distinguish between the grades of flour used when a straight-grade flour from which the color has been removed is baked into bread and compared with bread from a patent flour from which the color has not been removed, it is our experience that preference will be given to bread made from the straight-grade flour.

For the purpose of obtaining some data as to any injurious effect which might be produced in animals fed on bread made from bleached flour because of the presence of deleterious substances which certain opponents of bleached flour claimed were produced in it by the action of the bleaching gases, bread made from the same flour, bleached and unbleached, was fed to two lots of a dozen white rats each. The one lot of rats received only water and bread or biscuit made from the unbleached flour, the other water and bread or biscuit from the bleached flour. The rats were kept under close observation, and at the end of two months the greater number of each lot were killed and a careful examination made of the various organs of each. This latter work was done by the medical department of the Columbus Laboratories under the direction of Dr. A. Gehrmann. Careful and full record was kept of the various organs of each rat killed, including a microscopic examination of many. In no instance was there any indication, either before or after death, of any injurious effect whatever being produced by the bleached flour.

Exactly similar experiments were carried on by Dr. Walter S. Haines, professor in the Chicago University, with entirely similar results. Similar experiments by ourselves with flour bleached with nitrosyl chlorid showed like results. In addition to this numerous guinea-pigs have been fed at the laboratories during the past seven years, bread from bleached flour as the greater part of their diet, and in no instance has there been any indication of any injurious effect being produced in them by such bread. Many of them have been put to death for other purposes and the organs carefully examined. In no instance has there been any indications of any abnormal condition present which could be attributed to any constituent of the bread which they had received.

Statements relating to the poisonous effect of bleached flour and extracts made therefrom were made by Prof. E. F. Ladd and given as testimony in the North Dakota flour-bleaching case; again at the hearing held before the Secretary of Agriculture at Washington, D. C., finally published by Professor Ladd in "Government Agricultural Experiment

Station, Agricultural College, North Dakota, Special Bulletin No. 9, issued December, 1908," and later given as testimony by him in an important bleached-flour suit in England, by all of which means they have been given a wide publicity. Ladd states that he administered to rabbits alcoholic extracts of bleached and unbleached flours made and evaporated under certain specified conditions. The extracts from the bleached flour were reported by him to have produced death in a short time, the post-mortem findings being those of a corrosive poison. The experiments as detailed by Ladd have been carefully repeated by Professor Haines and Professor Snyder during the trial in North Dakota, by ourselves in connection with Professor Haines at the Columbus Laboratories, by one of the most noted American physiological chemists, and by competent English investigators, and in all these cases the results were found to be diametrically opposite to those reported by Professor Ladd.

In our own experiments we made alcoholic extracts from a flour which we had bleached by passing four times through gases from an Alsop process machine, and which contained 2.8 parts nitrite reacting nitrogen per million, also a similar flour very excessively bleached by nitrosyl chlorid, containing 30 parts nitrite reacting nitrogen per million. The extracts were rapidly evaporated at low temperature by use of a vacuum pump and the residue from about 250 grams of flour administered to rabbits in the same manner as Ladd had done. No effect whatever was apparent, either in the rabbit to which the extract from the Alsop process bleached flour was given, nor in that to which the extract from the flour bleached with nitrosyl chlorid was given. The acidity of the alcohol extract was identical for the three samples of Sunnyside flour, the unbleached, that bleached by the Alsop process, and that strongly over-bleached by nitrosyl chlorid.

Because of the findings of others who have thoroughly investigated this question, the contention of Professor Ladd of the presence of deleterious substance in commercially bleached flour has been thoroughly discounted by the court in North Dakota and the high court in England in which his testimony was introduced, and by all scientists who have investigated this question for themselves. Both judges in the courts specifically declared that the evidence was strongly against the presumption of the presence of any such deleterious substance in the flour thus artificially bleached. Furthermore, the court in England and the high court in France have made it a part of their decisions that such bleaching of flour is a meritorious process advantageous to the art of milling and the production of food for man.

The absurdity of Professor Ladd's statements is apparent without experiment, when we calculate that the total amount of nitrous and nitric acid which might be present in one of the flours which he used for his test, based upon double the amount of nitrite reacting nitrogen found (3 parts per million), and all calculated to nitric acid, is equivalent to only 5.4 milligrams (1/10 drop) of nitric acid; that the amount of nitric acid is practically 1/100, the medicinal dose of nitric acid as given in the U. S. Dispensatory, and that according to Professor Ladd's

testimony, the liquid administered to the rabbits was much greater in amount than necessary to produce the dilution specified in that work for internal doses of nitric acid. Under the circumstances we could not expect any corrosive action from this amount of acid, even assuming that it could have been separated out of the flour as free acid without in any manner combining with the organic matter of the flour and alcohol.

The assertion made by Ladd and others that the acidity of commercially bleached flour is increased and the iodin absorption of the oil of such flour is diminished was fully refuted by tables introduced into the North Dakota flour-bleaching case showing the results of a considerable amount of analytical work done by the United States Department of Agriculture, in which these points received careful attention. No such increase of acidity or decrease of iodin absorption was apparent. These results here given fully corroborated by our own experiments along these lines.

The claim by Ladd of the detection of a diazo composed of the nature of tyrotoxicon in commercially bleached flour was shown to be in error by ourselves in connection with Professor Haines by experiments in which exactly similar results as those described by Ladd were obtained when unbleached instead of bleached flour was used. The finding of such a substance by the method which he used would be very doubtful even if it were present. Its presence in cheese and milk is caused by bacterial growth and not by a process in any way similar to the bleaching of flour.

Nitrites and nitrite reacting substances, which form the chief basis of the clamor of the opponents of bleached flour against that material, are very widely distributed throughout the mineral, vegetable and animal kingdoms. We have entered more into detail in the question of this distribution in a former paper (published in *American Food Journal,* Chicago, Sept. 15, 1907), and will summarize the facts only very briefly here. Nitrites are found in many drinking waters. They are objected to in that connection because their presence is an indication of the bacteriologic condition of the water, and not because of poisonous qualities of the nitrites themselves. Nitrites are found in considerable quantities in soils and in such common foodstuffs as salt, baking soda and baking powder. They have been found in small quantities in green vegetables, including celery and other articles of food. They have been found in considerable quantities in preserved meats, especially those in the preparation of which saltpetre is used, and the formation of nitrites is apparently an essential step in the preservation of meats by saltpetre. We have found ham bought in the open market as high as five parts per million of nitrite reacting nitrogen, or five times the average maximum amount found in commercially bleached flour. Nitrite reacting nitrogen is found in all parts of the animal body, and is nearly always present in comparatively large quantities in the human saliva, including the normal saliva of healthy nursing infants. We have found in the saliva of man as high as 13 parts per million of nitrite reacting nitrogen, which is 13 times that found in bleached flour. While nitrite reacting nitrogen can nearly always be found in flour which has been bleached with nitrogen peroxid,

the presence of nitrites in flour is not a proof that they have been bleached, for, as shown by Dr. Weil (*Chemiker Zeitung*, Jan. 9, 1909), he has obtained reaction for this substance by the Greiss Ilsovay test in samples of unbleached flour and in wheat which he has examined.

After having devoted much time and energy during the past several years to a careful study of the question of flour bleaching in all its relations, we would sum up our findings briefly as follows: The essential action of the bleaching of flour is to remove from it a small amount of yellow color, which in itself is in no wise a valuable constituent because it detracts from the flour in the eyes of the consumer by whom the demand for flour is created. As shown in the rulings of high courts which have passed upon the matter in England and in France, the bleaching of flour is an improved step in the process of milling whereby a superior product is prepared for the consumer. The best results are obtained by its use only when thorough purification and cleaning are adopted, and it in no way contributes to the covering up of an unsound or damaged condition in the wheat. Any imperfection in purification or cleaning are made more apparent by the bleaching because these defects are in a manner covered by the coloring matter when it is present. Any improvement in quality brought about by removing an unusually large amount of color present in a flour which was inferior because of the presence of such excess of color, certainly cannot be looked upon as in any way injuring or deceiving the consumer, as has been contended by some, for the cause which produced the inferiority now no longer exists. The prohibition of the bleaching of flour would curtail the use and cut down the price of durum wheat, and all wheats which have an intense yellow in spite of the fact that aside from this some of these wheats produce flour of the very highest quality. The effect of this is naturally felt more by the producer of wheat and the consumer of flour than by the miller whose prices are regulated by market values and competition. The most searching investigations have failed to show the presence in the commercially bleached flour of any substance that in the minute quantities in which it is present is in any way injurious to the breadmaking qualities of the flour, or is in any way poisonous or has any toxicologic or preservative action, or any action which is prejudicial to digestion or nutrition.

103 State Street.

MALARIAL FEVER.*

GEORGE C. KASDORF, M.D.
ROBINSON, ILL.

Chills and fever, fever and ague, bilious and gastric fever, swamp fever, according to prevalent symptoms, are synonyms for malarial fever. Definition: An infectious, non-contagious disease caused by the hematozoon of Laveran. It is characterized by its prevalence in certain districts,

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its periodicity, usually a chill, fever and sweat, splenic enlargement and anemia in certain protracted cases. Varieties: Intermittent, in which the temperature comes to normal between the attacks; remittent, where it does not reach normal; pernicious malaria; malarial cachexia; masked intermittent, and malarial hematuria.

Historical Note: There are few diseases with which the profession has been acquainted longer than with malaria, and the earliest known hot-beds were the city of Rome, the Pontine marshes about the latter and the swamps of the lower Danube. The prevalence of the disease has long been and is still diminishing, in consequence of drying up of marshes, which thereby become unsuitable for the development of the mosquito. In Europe malaria is unknown to large areas. New England, once a malarial section, has far fewer cases, and the Middle West, through cutting down of woods, has not as many malarial occurrences, although the loam soil is favorable for it. In 1848 Noth, of America, maintained that both yellow fever and malaria were transported by the mosquito. King, in 1883, showed that malaria was transmitted in this manner. In 1891 Laveran recognized the mosquito as an intermediary host of this parasite. Similar views were held by Pfeiffer and Koch in 1892 and Bigami in 1894.

Pathology: The direct effect is attributable to the action of the malarial parasite upon the blood. The chief and constant morbid lesions are destruction of red corpuscles and symptomatic anemia following the same. There is a marked tendency to accumulate pigment in certain organs, particularly spleen and liver, the hemoglobin being converted into melanin. The malarial parasite also engenders a toxin, which, in part, may be responsible for the disease. The first change is the development of little portions of coloring matter, taken by the parasite from the blood-cell, segmentation then takes place upon the surface and when the spores mature the blood-cell is burst, the germ spreading into the current. Just before the latter occurs the paroxysm commences. The pigment of the blood-cells liberated is picked up by the leucocytes and deposited in the liver, spleen, kidney and skin. The fever is believed to be Nature's effort to rid the system of the germs and toxin; the blood destruction causes anemia, which latter becomes cachexia. The spleen is engorged with blood, at first swollen, but soon it becomes permanently enlarged (ague cake). A rare accident in malaria is rupture of the spleen. The liver is engorged, but not to the same extent; the heart chambers may be found acutely dilated; neuritis has been observed.

Etiology: The knowledge of the parasite depends upon the cycle discovered and may be classed under five heads: 1. Discovery of the plasmodium malariæ in the blood of persons suffering from the disease. 2. Its developmental cycle in man (sporulation), as shown by Golgi in 1885. 3. The discovery by McCallum of its method of sexual fertilization. 4. Its fertilization and development in an intermediary host (the mosquito), pointed out by Surgeon Major Ross, England. 5. The observation of the Italian School, showing its method of re-entering the tissues of man.

Predisposing Causes: 1. Soil; fresh-water marshes favor the development of malaria, and are most fruitful when located near the coast and

tainted with salt water. Marshy districts affording luxuriant vegetation are notorious as malarial foci. These facts account for the chief sources of the infection being situated in the tropics, low lying districts and deltas of rivers. 2. Climate: Malaria occurs most frequently in the tropical zones, less frequently in temperate regions, and more so in the latter than in the polar latitudes. 3. Rapidly growing trees dry the soils by absorbing the moisture. The eucalyptus tree was extensively employed in the Roman Campagna to protect these swamps and make them almost entirely free. 4. Season: In temperate latitudes most cases are developed in autumn, with its height in September. 5. Elevation: Persons living in higher regions are less affected, also those in upper stories of dwellings. 6. Race exerts little influence, although in the United States the negroes are slightly less susceptible than are the whites. 7. Sex has no influence, except that males may be more exposed in their occupation.

Intermittent fever is characterized by a sudden rise of temperature, with slight prodromata, such as headache, pain in the nape of the neck, a yellowish complexion and a slight splenic enlargement, or no premonitions and by its sudden drop to normal and regular periodicity of occurrences. Its forms are: quotidian, occurring every twenty-four hours; tertian, occurring every forty-eight hours; quartan, occurring every seventy-two hours. Pathologic changes are few in mild cases. The prolonged cases have marked internal lesions. With every chill there occurs an acute congestion of the internal organs, particularly liver and spleen, due to hyperemia, and in cases of longer duration interstitial changes are produced, without being, however, a true cirrhosis.

Etiology: The hemameba causing tertian intermittent fever begins its asexual cycle of evolution in the red blood corpuscles as a small hyaline ameba. Its development is attended with the appearance in its interior of fine, brown, motile granules in the form of pigment, and when matured it is about equal in size to a normal red corpuscle. It assumes a spheric form, the pigment collecting centrally, and sporulation into from fifteen to twenty segments follows. The tertian parasites are exceedingly numerous in the blood, and pass through the various stages of their life cycle almost simultaneously, the sporulation of an entire generation occurring within the space of a few hours (Golgi). The paroxysms follow the process of sporulation, which is attended most probably with the formation of a toxin, and the symptoms of the disease may be attributable chiefly to the effect of the latter. The red corpuscles that include the parasite become enlarged and decolorized as the latter develops. The parasite of tertian intermittent runs its cycle in about forty-eight hours, with a paroxysm every second day: if occurring on successive days, a double infection may have occurred, with two distinctive crops, quotidian intermittent.

The hemameba causing quartan fever cannot be distinguished from the tertian parasite at the beginning of the asexual carrier. Its ameboid movements are more deliberate, and its pigment granules are coarser, darker, and also less motile than those of the tertian organisms. Unlike the latter, they do not attain the size of the red corpuscles, and during sporulation the segments (5 to 10 in number) encircle in an orderly way

the central pigment mass or clump, "rosettes" of great beauty thus being formed. The red corpuscle that harbors this parasite contracts, appears shrivelled, and its color changes at the same time from the normal to a deep greenish or bronzed tint. It sporulates about 72 hours after it enters the red corpuscle; hence paroxysms occur every fourth day, quartan intermittent; a double infection every second day (48 hours). Triple infection causes daily paroxysms.

Symptoms: The prodromata are nausea, languor and headache from recession of the blood internally. The chill starts with a slight shiver up the back, running into a profound rigor, involuntary movements being attended with trembling. The surface is roughened, the blood going to internal organs, the temperature of the surface being sometimes subnormal, while in the rectum it is 105. The voice is weak, respiration rapid and inclined to be sighing. The chill lasts from one-half hour to an hour. The tongue is coated and breath foul from gastric irritation. The patient often vomits stomach contents and bile. The cold stage fades gradually into the hot, pulse becoming frequent, skin heated, patient restless, complaining of headache, and temperature rises to 104 or 105. Thirst is intense, with dry tongue and possible nausea and vomiting. This stage lasts from one to four hours. During the chill the urine is pale and abundant, while in the hot stage it is scanty and high colored. After a time the hot stage passes into the sweating stage, and the ease and comfort produced generally causes the patient to sleep. The temperature returns to normal at least by next morning, and he feels pretty well until the next paroxysms, though if oft repeated he feels always weakened, slight jaundice appears and the organs become enlarged. If the paroxysms are stopped the disease is tending to a cure; the shorter the disease the more are cachexia and other complications avoided. The fall in temperature may be unbroken by any fresh elevation, though more often the latter occurs. Less frequently the deffervescence occurs by steps; the temperature may fall one or more degrees, remaining at the new level for a short period, then dropping again an equal distance until it becomes normal. The sweating stage may be internal in form of a diarrhea. In children the paroxysms may run into convulsions and in a nervous child take on a remittent type, as the child is so impressed that it does not recover between the attacks. Epilepsy may be held in check by malaria. Pneumonia is the most formidable malarial complication, those going North after residence in a hot malarial district being liable to contract a double pneumonia of an adynamic character. A favorable prognosis should never be given in pneumonia associated with malaria.

Diagnosis is usually easy from the symptoms and history of residence, or the effect of quinin. From remittent fever it is diagnosed by the course of temperature. In pyemia the chills are irregular, a pale and not a yellow countenance, pulse is reduced and temperature does not come to normal except from shock. In the intermittent type the fever and chills occur in the morning, in tuberculosis the chills in the afternoon, fever in the evening and toward morning, and there are physical signs and the history.

Remittent or Continued Malarial Fever: Estivoautumnal Fever.—On account of the intensity of the gastrointestinal symptoms this variety is also termed bilious remittent fever. It prevails in warm and truly tropical climates, though it occurs in milder forms in temperate zones.

Pathology: Melanosis of the spleen, liver, and brain is generally observed; on the other hand, in rare instances the internal organs were found to be non-pigmented on autopsy. The spleen, if it be a fresh infection, becomes swollen, but it is soft; in protracted cases, permanently enlarged and firm. Microscopically the pigment is seen to be most abundant in the spleen-pulp and within and around the splenic veins. The liver is enlarged in like manner. The pigment that is found in the form of granular masses in all the hepatic tissue elements gives the organ a bronzed appearance (bronze liver). As in pernicious malaria, so in this affection, the brain, and particularly the gray matter, is in long-standing cases of a dark brown or almost black color. The arterioles are often found stuffed with phagocytes and blood discs, which contain pigmented parasites. Punctate hemorrhages may occur in the brain. The kidneys are pigmented and may show a severe acute degeneration of the cortical tubule cells (Ewing). Other organs, as skin and lymphatic glands, become more or less deeply pigmented. The blood shows marked hydremia, with partly or wholly degenerated red blood discs in abundance.

Etiology: The endogenous cycle of this variety is evolved chiefly in certain of the internal viscera, and microscopic examination of the blood in the various stages of the disease does not always give a positive result. The organism invades the red blood corpuscles, but to what extent is questionable. It is a small hyaline body, its size at maturity scarcely equaling one-half the dimension of the red cells, and it accumulates a very few fine pigment granules. The parasite may be found in the later stages in the blood from certain internal viscera, as the spleen. After the condition has lasted for some time the characteristic oval and crescentic bodies, more or less refractive, may be observed in the fresh blood. The so-called sickle-form bodies show central rods and clumps of coarse pigment, and are especially connected with the malignant type of fevers. Ring-form bodies, and at times the signet ring forms, are observed. The red corpuscles at whose expense the parasite develops assume a brassy green hue, becoming shrivelled and often crenated.

Symptoms: There may be prodromal symptoms lasting a day or two, but the signs are variable. The onset proper is more or less sudden and abrupt, but less so than in intermittent fever. Shortly after the chill the temperature rises to 104 or 105. The cold is not so marked, but the hot stage lasts longer, with aching in the brows, back and legs. The fever gradually goes down, but the slight sweat is not of a refreshing character. As the hot stage develops, the system is profoundly affected, the hyperpyrexia may be such as to be very dangerous, especially after exposure to the sun or the influence of alcohol. The skin is dry, face flushed, headache severe, muscular pains marked. The respirations are quickened by the fever and congestion of lung. The pulse is full and hard; there is a fulness and tension in the epigastrium. Violent vomiting which does not give relief, the amount ejected exceeding amount ingested,

may become bloody and resemble black vomit of yellow fever (gastric remittent fever). The symptoms last ten to twelve hours, then gradually abate to become the period of intermission, the time usually employed for treating. In severe cases the remission can only be detected by the thermometer, it lasting two hours; in mild cases from ten to twelve. The longer and more marked the remission, the better the prognosis. The remission ends in a chilliness, quickly followed by the hot stage as before, or a little worse. The fever may become continuous, without any marked remissions. A paroxysm should begin about noon and continue to about midnight, then remission persists until about noon the next day. If the fever is unchecked, the remission becomes shorter, and in about a week there will be a continuous typhoidal state, with dull heavy countenance and sordes. The vomiting is not so constant after the first week, and there is constipation in contradistinction to typhoid. If not watched a diarrhea may be set up from irritation along the gastrointestinal tract, and if offensive is of an evil omen; so also is hiccough when continuous and appearing late. There is much hepatic disturbance, but rarely marked jaundice. If the case cannot be controlled, the pulse becomes weak, thready, feeble; the patient slips down in bed and subsultus tendinum sets in. He may have low muttering delirium, tympanites, all the symptoms of typhoid except the rash, and a blood examination will be necessary. If the case is recovering the remissions become more marked. Urine is scanty and high colored all along and may contain albumin. Delirium is rare except in those who have lived imprudently.

The bilious remittent type is accompanied by more or less catarrh of the common bile duct, vomiting of the bilious material, and yellow skin; there is tenderness of the liver. In children it runs the same course, except that it is more likely to be followed by cachexia.

Diagnosis—Remittent and Typhoid.—In remittent fever the parasite can be found; rapid increase of temperature in first few hours to 104 and 106; marked remissions; no spots; constipation at first perhaps, followed by diarrhea. In typhoid there is slow development, and rise of temperature not reaching maximum before the end of the first week; no marked remissions; spots in 99 out of 100 cases and diarrhea at the outset. In the second week the appearance of both is alike.

Remittent and Yellow Fever.—In remittent fever there is rarely black vomit or scanty albumin; quinin has a characteristic action. In yellow fever the temperature is continuous after establishment; considerable albumin as a rule and black vomit.

Prognosis in simple remittent fever is good, 95 per cent. tending to recover. Death never occurs except after the seventh day, unless from complication; in yellow fever it is common on the third. Yellow fever is contagious, requires a mean temperature of 72 degrees, and has its own habitat. Remittent fever is not contagious; is mild in the East, but often fatal in the South and the West. Meningitis, pneumonia, gastroenteritis, dysenteric diarrhea and the condition of the patient at the time of the attack may make the case dangerous. Faint uncertain remissions and a tendency to collapse at the end of exacerbation are bad signs, as is also a tendency to hemorrhage. The duration is from ten to twenty days.

Pernicious Malaria.—This is an extremely dangerous form and fatal if allowed to continue, though 75 per cent. may be saved. It may follow intermittent fever, but is usually remittent and of the quartan variety. It depends upon the estivoautumnal parasite almost invariably. The condition is brought about probably by a great number of germs and by their rapid reproduction, the vessels being found crowded in the parts in which the characteristic symptoms occur. The danger arises from involvement of particular vital organs. Another factor is probably the production of a specific toxin. The lesions are more those of intermittent than of remittent. The first symptom is usually a prolonged chill, which has often occurred before the pernicious character set in.

Varieties.—Colliquative, is characterized by a profuseness of sweating. Comatose, the most common, by intense headache, perhaps vertigo, stammering or inability to speak, ushering in the hot stage, when stupor occurs. The pupils are now dilated, face flushed, temperature 105 to 106. The patient lies paralyzed in bed, and urine is retained and albuminous; the bowels move involuntarily; the breathing becomes stertorous. This lasts for several hours, and if he comes out at all does so in twelve hours; then sweating and gradual returning to consciousness, taking five or six hours. The next attack often proves fatal. Delirious, exhibits an active violent delirium in the hot stage; the face is flushed, eyes brilliant, pupils dilated. The pulse is full and hard; temperature 107 to 108; patient cries and screams. With the end of the hot stage fatal coma often comes on in first paroxysm. This kind is not the most common, but dangerous. Gastroenteric much resembles true cholera. In the hot stage the patient is seized with uncontrollable purging and vomiting, the material is soon blood-stained and stools resemble salt-brine or rice-water. Pulse is small and thready, thirst intense, countenance blue; cramps in legs; breathing becomes shallow, sighing and feeble. The patient is very restless, and may spring out of bed just before the fatal end, which occurs with collapse in six to eight hours. Algid, exhibits rectal temperature, 107 to 108, while by surface it is low. The patient feels cold externally. The surface temperature may be 85 to 90, and after the hot stage there is a marble feeling and cold sweat, the temperature becoming normal by rectum. The voice is feeble, heart imperceptible. Icteric, presents swarms of germs in the liver. The hematuric presents profuse bleeding from kidneys. Pneumonic or dyspneic, does not consist of a true pneumonia, but simply of an intense congestion of the lungs. In any of these forms the second or third paroxysm may prove fatal.

Diagnosis.—Inquire if prevailing epidemic is quartan. The comatose type may be taken to be apoplexy. In latter, however, pulse is slow, full and hard, and becomes irregular, hemiplegia occurs suddenly, pupils may vary or be contracted; there is a sudden loss of consciousness and patient as a rule is stricken in full health. Meningitis is distinguished from the comatose variety by several days elapsing before the coma is reached, with preceding pains in the head, photophobia and a mildly increasing delirium. The pulse is small, tense and wiry, and temperature ranges only from 102 to 103. Gastroenteric, pernicious malaria is likely to be confounded with cholera. In the latter the stools are always rice-water,

while in malaria they are at first blood stained. In malaria the parasite may be found and cholera has albuminuria constantly present. Icteric forms are to be diagnosed from yellow fever by history, generally by an exposure to malarial miasm, or by the prevalence of yellow fever.

Prognosis is always unfavorable unless controlled before the second paroxysm, as most live through the first. The mortality is greatest at the onset of an epidemic. Marked remissions or a total intermission is favorable. The gastroenteric and algid types are most fatal, the outlook being better in the comatose and the delirious. The extremes of life and intemperance are unfavorable.

Malarial Cachexia, chronic malarial infection, occurs either as a sequela, or is developed independently in one who has never suffered from either form, but has resided in a malarial district. The morbid anatomy is the same as in those conditions, and the spleen may enlarge from eight to twelve times its normal size.

Symptoms: Most prominent is the anemia from poor blood. There may be vertigo, tinnitus aurium, loss of memory, amaurosis, anorexia, constipation or diarrhea, nausea, flatulence, gastric catarrh, pains below the belt, epigastric oppression and often morning diarrhea, the slight periodical congestion resulting in an internal sweat. The sleep is usually unrefreshing, possibly a pain in back, legs or joints, muscular fatigue, short breath, palpitation and dyspnea. The nervous system suffers most, the anemia being a frequent cause of neuralgia. Localized anesthesia is common along outer thigh or arm, a numbness which makes patient consult from fear of paralysis. Itching of the skin may be marked and tickling and burning of the soles of the feet, which is also characteristic of gout, may be present. Genuine hemiplegia may result from the germs crowding the motor areas. If in peripheral neuritis most causes can be excluded, always consider malaria. Various mental derangements may arise and also nephritis, or the poison may attack stomach, bronchi or intestines. Hypochondriasis is common, also facial neuralgia, coming on before noon and lasting until night. There may be periodical hemorrhages from mucous membranes. In long-standing cases the spleen does not completely recover; in all other cases recovery may be expected. The diagnosis is aided by the enlargement of the organs, the microscope, periodicity and circumstance of development.

Masked Intermittent.—This presents itself in the same way as cachexia, but has no fever. This type comprises a long list of symptoms, at the head of which is neuralgia. Most often the supraorbital branch of the trigeminus is involved. A striking periodicity may be observed, the painful paroxysms usually beginning in the morning and terminating in the late afternoon. The patient's sufferings increase steadily in intensity until just before the close of the attack, when they suddenly abate.

Malarial Hematuria and Hemoglobinuria.—The hemorrhagic form of pernicious intermittent, in which hematuria is a prominent symptom. The reduction in red cells is as low as 670,000, while seven out of ten red cells may contain parasites. This form is observed at the onset of cold weather.

Symptoms: A mild cold stage, a sub-febrile temperature to which is added hematuria, often hemoglobinuria. The paroxysms may be daily bi-daily, or at longer intervals, or may be continuous.

ACUTE GENERAL PERITONITIS.*

C. E. Beecher, M.D.

GILSON, ILL.

In selecting this subject I attempted to select one that the general practitioner meets with in the every-day walks of his profession, and have tried to simplify it and make it as concise as possible without omitting any of the salient points of the disease.

The surface of the peritoneum, we are told, is as large as that of the integument of the body; in its reduplications and folds it practically surrounds all the abdominal viscera and organs. It is, therefore, exposed to infection on all sides. The infection is always one of several micro-organisms which gain access to the peritoneal cavity. The pathogenic germs that most commonly give rise to peritonitis are the *Bacillus coli communis, Staphylococci aureus* and *albus, Bacillus pyocyaneus* and *Streptococcus pyogenes,* the gonococcus and the tubercle bacillus. The infection is not always a pure culture, but is usually mixed, several forms of the above pathogenic micro-organisms being present. The peritoneum may be invaded in four ways: 1. From the general circulation, the so-called hematogenous peritonitis. 2. By bacterial invasion from neighboring organs without perforation, or infection by continuity. 3. Following perforations of any of the viscera. 4. Infection from penetrating wounds or abdominal operations, not perforating the viscera. The first is a rare cause of acute peritonitis and is usually the result of an infection by the pneumococcus or tubercle bacillus. In either, the disease is of little importance, because the lesions are usually secondary to a severe infection in some other organ of the body, such as the lung, and therefore usually beyond treatment. The second type, however, is a very important one, including, as it does, the group of puerperal infections and a certain number of cases of appendicitis. The puerperal invasion is a direct growth of the species causing the disease along the extremely abundant lymphatics of the uterus and adnexa, and thence to the peritoneal cavity through the lymph spaces of the peritoneum. In the appendix the case is somewhat different. Here the organ may be surrounded by an abscess yielding on culture nothing but the colon bacillus, while in sections of the organ, properly stained, the whole thickness of the wall will show an abundance of streptococci. The colon bacilli of the abscess have been able to pass through the diseased tissues of the appendix and form an intraperitoneal abscess and have outgrown the less vigorous streptococci. Much the same form of invasion is seen in strangulated hernia. Here the fluid contents of the hernial sac are found to contain certain bacteria in a certain number of cases, even though the intestinal wall is not gangren-

* Read at Semi-Annual Meeting of the Knox County Medical Society, Sept. 16, 1909.

ous. In puerperal infections the streptococcus is the almost constant factor, while in appendicitis and strangulated hernia the streptococcus and colon bacillus are commonly found. Perforative peritonitis, on the other hand, is a true polyinfection. Often as many as ten different species have been found, although it is doubtful that they all contribute equally to the peritoneal inflammation, the active agent in this case being the streptococcus with a secondary infection of the colon bacillus.

The reasons for the recent change of opinion concerning the active part taken by the latter in the pathogenesis of peritonitis are numerous. In the first place the growth of colon bacillus is so rapid on all media in common use that other species, especially the rather feeble streptococci, are soon overgrown in plate cultures and their recognition rendered impossible, when by staining the tissues or in cover-glass smears from the peritoneal exudate the streptococci are found to be abundant. Another fact not absolutely convincing, yet of some importance, is the relative slight pathogenic property of the colon bacillus when injected into animals compared to that exerted by the streptococcus under similar conditions. Animal and human susceptibility to a given micro-organism are not at all times parallel, but, as a rule, virulence to animals can be accepted as some indication of its relation to man. The peritonitis produced by infection during an operation or by material carried into the abdomen by a stab wound or pistol-shot wound usually shows the streptococcus or staphylococcus as the active agent, the staphylococcus being found most often. The infection in these cases is often of a most virulent type, producing a rapid spreading peritonitis, soon becoming general.

To produce a bacterial peritonitis, several factors are necessary. The injection of a moderate quantity of a cloudy culture of bacteria into the peritoneal cavity produces no peritonitis; neither does the injection of bacteria and their toxins. Both are rapidly absorbed by the healthy peritoneum. There must be some injury to the cells of the living endothelium in order that the bacteria may find a place to grow and set up the tissue changes we call peritonitis. Such an injury may be produced by drying of the peritoneal surface, by rough operative traumatism, by irrigations of mercuric chlorid, from chemical substances extended from an unruptured abscess in the abdomen and by unsterilized bowel contents. Then, and only then, can there be produced a progressive peritoneal inflammation by the action of bacteria. Bowel contents are especially dangerous, because they not only act as foreign bodies and irritate the delicate endothelium, but also contain in them the bacteria necessary to use this injured area as a place for growth. They thus protect their contained germs from rapid absorption until they have a chance to grow. But the process is not dependent in any way on the chemical compounds of the bowel contents; it is entirely mechanical; blotting-paper infected with a blood culture of the germ would do as well. When an abscess ruptures into the peritoneal cavity it carries in the discharged pus the necessary elements for a spreading infection—the bacteria and their toxins in large quantities, hidden in solid particles of fibrin and necrotic tissue which act as a protection until an inflammation can be started in the as yet uninjured peritoneum. In those cases in which there has been

sufficient trauma during the course of an operation, the simple presence of bacteria will start an active process in the weakened peritoneal coat, and there is no need of foreign particles to protect the germ from absorption. The classification of acute peritonitis should be based on the bacterial infection, because on the nature of the infecting organism depends the symptoms, course and prognosis of the disease.

The classic picture of general peritonitis offers but slight interest to the doctor. The drawn-up knees, the swollen abdomen, the anxious, shrunken face are but indications that the time for all treatment is past. The whole aim of the doctor should be, therefore, to make the diagnosis and to attack the disease before the system has been poisoned beyond all hope of recovery. To do this requires more than the mere observation and weighing of the ordinary symptoms. It requires the ability to judge the patient's expression, to recognize the gravity of the situation, irrespective of the exact temperature and number of pulse beats. The early cases vary much in the severity of these symptoms, depending on the suddenness of the infection, its bacterial nature and whether the process is local or general. When there has been a perforation of one of the hollow viscera and a large quantity of infectious material has been distributed about the peritoneal cavity, the rapid absorption of bacteria and toxins cause a profound shock to the system, and may even cause the death of the patient in a few hours. Should this not occur, then the patient goes on either to general peritonitis or to a localized abscess with encapsulation of the material which has escaped from the perforation.

The symptoms in the first stage will be extreme and sudden pain, at times general, at other times localized at the point of perforation or referred to the epigastrium. The prostration will be marked, the pulse feeble, the skin cold and clammy. Tenderness on deep pressure may be marked over the site of the rupture or may be entirely absent. There is only rarely general tenderness over the abdomen; this is rather a later symptom, depending on the beginning of the active inflammation, and often does not occur until 8 or 12 hours after the perforation. No possible decision can be made at this time on the probability of the localization of infection, and delay only adds to the certainty that the patient's chances will become less the longer the period which elapses between the perforation and the operation for its closure. Cases in which there is a rupture of a localized abscess often show a remarkable improvement of the patient's subjective condition, due to relief of pressure on the nerve fibers of the abscess wall; but the rapid quickening of the pulse and rise of temperature point inevitably to the fact that an increase in the septic conditions is taking place. In other cases there may be absolutely no warning at the moment of perforation and the beginning of the process of generalization, and this most often occurs with gangrenous inflammation of the appendix. It is here quite natural to suppose that the nerve fibers of the organ are involved in the necrotic condition of the rest of the tissues, and that surrounding peritoneum, already inflamed by chemical exudation of the appendix. In these early cases of peritonitis, unless there be a clear history of previous trouble, the diagnosis often has to be made on a very slight basis. The temperature may be low, not over 100 F. very

often, with a pulse of 80 to 100, and only slight tenderness and distention of the abdomen; yet the patient has an indescribable, anxious, pinched look about the face that will enable a good observer to make a probable diagnosis. The most valuable symptoms are the pulse and the condition of the abdomen. The pulse in many of the well-advanced cases is peculiar, but easily recognized after a little experience. It is increased in frequency to 110 to 130 and is a little hard and snappy. The abdomen is tender, with a point of greatest sensibility at the place where the disease began, though in exceptional cases the most tender spot is on the side of the abdomen away from the point of origin. The abdominal muscles are rigid in the reflex attempt to protect the painful viscera beneath, and there is a marked distention due to paralysis of the muscular coats of the intestine by the poison, and possibly several other factors, the infiltration of the wall of the gut by the inflammatory products and also the irritation of the inhibitory nerves. Chilly feelings are a common symptom; but actual chills are rare, except in the puerperal form, when a severe chill frequently marks the beginning of the disease. In the latter type of infection, diarrhea is frequently present; instead of the usual obstinate constipation. Vomiting is an important and early symptom, often beginning before pain or tenderness, and thus indicates its origin from the irritation of the peritoneal nerves. Later it assumes the characteristic form seen also in cases of intestinal obstruction from any cause; the quite constant regurgitation of the contents of the stomach into the mouth without any effort on the part of the patient. Finally the fluid becomes the true stercoraceous vomit, and is a symptom of the final stages of the disease. Such cases are rarely saved by any means, operative or otherwise.

In conclusion, you will see that the diagnosis of peritonitis is not always clear at first, but, as a rule, can be made early from the history and sudden onset of symptoms.

SOME OF THE DANGERS OF PROLONGED ANESTHESIA.*

CLYDE A. FINLEY, M.D.

Formerly Instructor in Diseases of Women at the New York Post-Graduate Medical School and Hospital.

GALESBURG, ILL.

All anesthetics are drugs, capable of producing profound toxic symptoms endangering comfort, health, or life, according to the amount administered. I have divided the dangers into three classes—dangers to comfort, dangers to health, and dangers to life—and shall confine my discussion to the use and abuse of the two chiefly used anesthetics—ether and chloroform.

Regarding the dangers to comfort, the period of discomfort following anesthesia should be very short, not lasting more than a few hours. Perhaps a slight amount of nausea or one or two attacks of vomiting are sometimes unavoidable. Thirst should not be prominent. Food should

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be craved within twenty-four or thirty-six hours. Headache, backache, or gas-pains should not occur. Instead of this the opposite extreme altogether too frequently prevails. Instead of lasting for only a few hours, the discomfort is extended for a period of several days, or a week in some cases. The nausea is profound and the vomiting is persistent, continuing so long as there is fluid in the stomach, and then producing a greater degree of discomfort by retching and gagging until there is marked exhaustion. Thirst is burning and almost unquenchable, and any fluid taken into the stomach for its relief is promptly expelled. The thought of food is repulsive. Headache is severe, and pain in the back is so severe that it is often the cause of the greatest complaint. Gas-pains are very troublesome and distressing; and often belching, with the odor and taste of the anesthetic, is present well on into convalescence. All these conditions taken together make about as complete a picture of physical misery as one can witness. And it is for this very reason that patients are so frequently heard to remark that if they had known the distress they would have to experience they would never have been operated upon. And it is also largely responsible for the lay prejudice against surgery which the profession has striven so long and so hard to overcome. It might be well to add here that this condition is not different from any other principle in medicine or surgery; remove the cause and the symptoms will disappear. As soon as surgeons so conduct their operations that this discomfort will largely disappear they will find that very soon the prejudice of the laity will to a great extent be overcome.

Regarding the dangers to health, ether especially is an irritant to the respiratory tract, to the digestive tract, to the urinary tract, and to the circulatory system. It very often stirs up an old bronchitis, gastritis, nephritis, or endocarditis, producing an acute attack for the patient to battle with during convalescence. One of these acute attacks is not infrequently produced even where the chronic condition has not existed. In the respiratory tract, pneumonia may also be mentioned as one of the prominent dangers either from irritation or inhalation. If the attacks are severe, they tax the patient to the utmost to recover, and are a source of considerable worry and extra work on the part of the surgeon. If they are not very severe, as a rule not much attention is paid to them, though they are apt to persist for a long time after the patient has returned to the family physician. It is probably because the surgeon sees them for so comparatively short a time that so little impression is made on him. If he were always to continue treatment until the general health is restored, more care would be taken to see that not sufficient anesthetic is used to produce these conditions.

The greatest dangers, of course, are those to life, and it is these dangers I shall speak of more in detail. As a rule, the safety of the patient while on the operating table is fairly well looked after and precaution taken against accident while the operation is being done, so that death on the table is of comparatively rare occurrence. The dangers to the respiratory, circulatory, and urinary systems I have already mentioned as menaces to health. Anesthetics are capable of producing lesions in any one of these systems sufficient to cause death; such as pneumonia, edema of

the lungs, cardiac dilatation or exhaustion, suppression of urine with consequent uremia, or acute nephritis. But I wish to take up two conditions about which comparatively little has been written and which in a great many cases are not recognized.

The first is hepatic toxemia. It is almost always preceded by the administration of chloroform, though it has been seen following ether anesthesia. The patient usually does very well for a period of twelve to forty-eight hours, when there is a sudden development of delirium, usually of the type in which fright is a prominent feature, and the pulse begins to increase in rapidity and decrease in strength. A slight jaundice may appear. These symptoms increase until death occurs, usually twenty-four to seventy-two hours later. The temperature remains normal until near the end, when there is a sudden rise. I have been able to find the report of but one recovery from this condition. Bevan reports a fatal case and cites twenty-nine others reported by various surgeons. Autopsy findings show nothing beyond fatty changes in the liver, and Bevan, after an exhaustive study, declares the cause of death to be hepatic toxemia, and concludes that the danger of this complication arising is in direct proportion to the amount of chloroform administered during the operation.

The other condition I shall speak of is intestinal paralysis. I have never heard it discussed in meeting and can find very little literature about it. I have seen it only after the administration of ether. At any time within thirty-six hours the abdomen begins to distend. There is no or only slight rise in temperature or pulse. The bowels lose their normal gurgle, and the sounds emitted from the intestines are metallic. Peristalsis is completely inhibited. If enemata are given they are usually retained. Very little gas escapes if a rectal tube is passed. The condition is usually mistaken for an infection followed by general peritonitis, and for that reason I am inclined to the belief that it is of much more frequent occurrence than is commonly supposed. I have witnessed a number of autopsies on cases in which the cause of death was supposed to be general peritonitis following a laparotomy, but no evidence of an inflammatory process was present in the peritoneal cavity, though the distention was sufficient to stretch the skin over the abdomen until it glistened. The condition should not be mistaken for general peritonitis, for about the only symptom they have in common is distention. There is no sensation of chilliness. There is an absence of rise in temperature or pulse in the early stages. The facial expression always found in peritonitis is never present. There is no vomiting. Distention may become sufficient to embarrass respiration, thus producing more or less cyanosis. If this stage is reached there may be an increase in the pulse rate. The usual cathartics and laxative enemata are ineffective. Eserin salicylate, hypodermatically, produces no result. Just preceding death the temperature, pulse, and respiration rise. Death occurs in from three to six days and seems to be due to autointoxication and respiratory paralysis. Fortunately the mortality in this condition is not so high as in hepatic toxemia.

The question as to who is to blame for these conditions naturally arises. The surgeon is inclined to blame the anesthetist, and the anes-

thetist wants to put the responsibility on the surgeon. In a recent number of *The Journal of the American Medical Association*, a Saratoga surgeon places on the anesthetist the entire blame for the dangers from anesthesia. But his article goes on to show that it is the incompetent anesthetist of which he is speaking. The very fact that a surgeon will employ an incompetent or inexperienced anesthetist places the blame, in that case, on the surgeon himself. And for my part I believe that most of the blame in all cases rests there. The fact that the dangerous elements of anesthesia are exhibited in cases in which the anesthetist is an expert should clear the latter of blame. All he can do is to administer the anesthetic in a skilful manner and continue it until the operation is completed. The surgeon certainly is to blame for the length of time during which an anesthetic is necessary, and the longer the time the greater the amount of anesthetic used.

The situation certainly should be remedied, and the only remedy lies in shortening the time used in the accomplishment of the necessary steps of operation. Time should not be wasted after the patient is anesthetized. Nor should more time be wasted after the operation is begun by attempting to follow unfamiliar methods simply because the surgeon has read or heard of them, when he is familiar with some method that will accomplish the same result. One great trouble with the surgeon is that he forgets that he is not the chief factor in any case. He forgets that there is such a thing as Nature, and attempts to remove all traces of disease himself and leave nothing for Nature to do. He should not hinder or confuse himself with a multiplicity of instruments. He should not hurry. But he should be ready to begin the operation as soon as the patient is anesthetized. He should perform only such details as are necessary and should follow only the methods with which he is familiar. He should remember that he is only the assistant of Nature and should do only those things that will aid Nature in overcoming the disease. His instruments should be few. He should operate quickly, making it necessary for the patient to receive only a minimum of the anesthetic. Every move should be for some definite object, and should accomplish something definite for the completion of the operation. He should not "piddle," as is too often the case. The average operation should be completed in from ten to eighteen minutes. The more difficult ones may require from thirty to forty-five minutes. In but one case have I ever found it necessary to prolong an operation to fifty minutes. According to Morris, many appendicitis operations, even with complications, should be completed in five minutes; stomach and bowel resections, or breast amputations requiring about thirty minutes.

When surgery is done in this manner, the discomfort following operations will practically disappear. Health will be restored instead of being so frequently injured, and deaths will not be traceable to an overdose of some anesthetic.

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FEBRUARY, 1910.

COUNCIL OFFERS AID TO STATE BOARD OF HEALTH.

At a meeting of the Council of the Illinois State Medical Society held at Springfield, Thursday, January 6, the following action was taken on the matter of the suit of the National Medical College of Chicago against the State Board of Health. It will be remembered that a mandamus suit was brought by the National College to compel the State Board of Health to recognize its diplomas and a personal damage suit against the members of the Board. The full importance of the action of the Council of the State Medical Society may appear later. "It is moved by M. L. Harris and seconded by J. W. Pettit, that this Council offer to the Illinois State Board of Health any assistance within our power in the action brought by the National Medical College against the State Board of Health."

THE MONUMENT DEALERS OF ILLINOIS ORGANIZE.

Still another one of the branches of trade represented in our state has found it necessary to organize and protect itself from the fraud and grafter who seems now to permeate every branch of society and business.

The first meeting was recently held in Springfield. Possibly when all the various professions and trades become organized it will be possible to do something toward eliminating the undesirables. Certainly under present circumstances it seems impossible for society to entirely rid itself of the charlatan, which is usually only another name for criminal. In addressing this new organization Mr. Burke Vancil, a prominent attorney in Springfield and also interested in a local monument works, expressed some wholesome sentiments as follows: "I congratulate you, gentlemen, upon the stand you have taken to rid the country of the irresponsible so-called monument dealers. In order to succeed you must see to it that it means something to be a member of this association. If you do, the time will come when no one will think of placing an order with anyone but a member of the Illinois Retail Monument Dealers' Association. You must harmonize your business with the principles of this association and keep it in harmony. Why is the tombstone man so often classed with the lightning-rod man, the book agent, the patent-right man, the quack, and, yes, the shyster, and all the other bugbears of the commercial world to-day? It is because of the vampires and tramps in the business, together with a few dealers now and then who are crooked. The crooked dealer has demoralized the trade to such an extent that the legitimate dealer is nearly always classed with him. We must, therefore, absolutely disown the tombstone tramp and the crooked dealer, one is as bad as the other, and let the public know that the members of this association stand in a class by themselves. It makes my blood boil when I think of the lying deceits of the world of business to-day. Ours is not the only business, by any means, gentlemen, that is infested with the blight of falsehood and deception. Look to your own laurels, business men and all of you. What are you doing to drive out of your business the man who steals from his customers? I gladly welcome, therefore, an organization not only committed to the eradication of the dishonest dealer, but also determined to strike a death blow at grafting by those in a position to influence the letting of contracts for monumental work. Gentlemen, if your work will sell on its merits as it should, you have no business keeping on your pay rolls the executors, administrators, undertakers and sextons of your community. Leave that to your crooked competitor.

"Hear me, gentlemen. Do you know that the most valuable asset in your business to-day is the confidence and faith of your customers in your integrity? See to it that you do not betray that confidence. Our customers are at our mercy always, and they will soon learn to trust us instead of the unscrupulous tramp or dealer who is ever on the move, has no permanent abiding place, who pays no taxes, has established no credit in the community nor earned an honest name in the business world."

MORE ABOUT MEDICAL EDUCATION IN ILLINOIS.

In our December issue appeared an editorial on the subject, "Illinois and Rotten Medical Education," in which was quoted resolutions passed by the Southern District Medical Society. In the "Advance Sheet" of the December *Bulletin of the Illinois State Board of Health* a very lengthy article appears in defense of the present system. In another part of this issue appears a communication from Dr. Carl E. Black, chairman of the Judicial Council of the Illinois State Medical Society, which we recommend to our readers as good food for thought. We will make further comment in a later issue.

TRIANGULAR COMMITTEE ON TEMPERANCE INSTRUCTION.

As the result of a discussion at a recent meeting of the school teachers of Illinois, a triangular committee, composed of members of the W. C. T. U., the Illinois State Teachers' Association and the Illinois State Medical Society, has been appointed to formulate some common line of action for the future of temperance instruction in the schools of the state. This appointed committee is to make its report at the next meeting of the State Teachers' Association, to be held in Springfield in December, 1910. The committee will hold its first meeting in Chicago at the call of the chairman, Mrs. Ella Flagg Young. The following is the personnel of the committee:

W. C. T. U.—Mrs. Mary Kuhl of Chicago, chairman; Mrs. Harriet Darling of Aurora, Mrs. Mary Brumbach of Odell, Mrs. Minnie C. Horning of Evanston.

State Teachers' Association.—Mrs. Ella Flagg Young of Chicago, chairman; Dr. John G. Coulter of the Illinois Normal University, Mrs. Ella H. Mattice of Aurora, and Prof. J. D. Armstrong of Chicago.

State Medical Society.—Dr. J. L. Wiggins of East St. Louis, chairman; Dr. N. S. Davis of Chicago, Dr. J. W. Pettit of Ottawa, and Dr. J. F. Percy of Galesburg.

REPORT OF COUNCIL

Illinois State Medical Society.

Council met in regular quarterly session in the city of Springfield, Jan. 6, 1910, at 10 a. m., at the St. Nicholas Hotel. There were present Chairman Black, Councilors Harris, Pettit, Newcomb, Percy and Secretary Weis. By invitation Editor Kreider, Assistant Editor Baxter, Harold N. Moyer, Stephen C. Glidden and A. M. Miller.

Treasurer Everett J. Brown presented his general report for the year 1909 with vouchers attached; also two certificates from the National Bank of Decatur certifying to the cash balance to the credit of the treasurer

in said bank. The report, vouchers and certificates were referred to the auditing committee appointed by the chair, consisting of Harris, Pettit and Newcomb. Said committee reported that the accounts were correct, which report, on motion of Percy and seconded by Weis, was approved. Treasurer Brown also submitted a report of the financial condition of the Medicolegal Defense Committee.

Chairman S. C. Glidden, on committee of arrangements, and Dr. A. M. Miller, a member of said committee, here addressed the Council, making a verbal report of the work done by the committee in relation to the annual meeting. They stated that their desire was to send out two circular letters of notice to the profession generally, and further reported that they had not as yet decided upon the exhibition hall, but would do so in the very near future. They were urged by the Council to make a choice consistent with the needs of the regular meeting at the earliest possible moment. The report upon motion was received.

Chairman Moyer of the executive committee of the Medicolegal Committee reported to a motion adopted by the preceding council requesting him to furnish data and a recommendation as to the advisability of increasing the per capita tax to cover judgments. Chairman Moyer spoke exhaustively on all phases of the subject. He entered into the closest detail, showing that he had given the matter a great deal of thought and attention.

Many questions were asked and answered, and finally it was moved by Pettit and seconded by Percy that Dr. Moyer be instructed to formulate his ideas and suggestions relative to the above-mentioned subject and to present the same to the next House of Delegates.

The secretary presented a letter of Mr. George B. Mills, of Evanston, chairman of the Committee on U. S. P. and N. F. Propaganda of the Illinois Pharmaceutical Association in which it was solicited to combine the work of this propaganda in a measure with that of our Lecture Bureau. After thorough discussion it was thought best for the present that the secretary be instructed on motion to not affiliate at the present time with this committee, and to so inform Chairman Mills.

Councilor Harris now gave the Council the result of his experience with the new order of things connected with the postage on second-class matter, which experience came to him as trustee of the A. M. A. Action was deferred until the necessity therefore arose.

Chairman Black brought to the attention of the Council the fact that the Illinois State Board of Health and its members individually were being sued by the National Medical College of Chicago for the purpose of compelling recognition; and it further being thought that the Illinois State Medical Society, through and by its Council, could be of some use to the defendants, it is moved by Harris and seconded by Pettit that this Council offer the State Board of Health any assistance within our power in the action brought by the National Medical College against the State Board of Health. Carried.

George Edwin Baxter, Assistant Editor, presented a financial statement of moneys collected by him from advertisements, which, upon

motion, was referred to the auditing committee. Said committee, after examining, reported the same to be correct, whereupon it was moved by Percy and seconded by Weis that the report of the committee be approved. Carried.

Upon motion, adjourned to meet at the call of the chair. Adjourned.

E. W. Weis, Secretary.

Correspondence.

DR. STANDARD MAKES CORRECTION.

Canton, Ill., Jan. 20, 1910.

To the Editor:—In looking over the last number of The Illinois Medical Journal I found a notice stating I had come to Canton to be Medical Superintendent of the Graham Hospital. This is not correct and I do not have any idea as to the origin of the notice. It has caused me a great deal of inconvenience and I would be very thankful if you would correct it in your next issue of The Journal. I came to Canton for the practice of general surgery, and do not have anything to do with the management of the hospital. Thanking you in advance for this favor, I am

Very truly,

A. P. Standard, M.D.

MEDICAL EDUCATION IN ILLINOIS.

Mr. Editor:—This communication assumes that your readers are familiar with the editorial in The Illinois Medical Journal, December, 1909, p. 723, entitled "Illinois and 'Rotten' Medical Education," in which is quoted a resolution adopted by the Southern Illinois Medical Society at its last annual meeting (Nov. 4 and 5, 1909), held at East St. Louis, and that they are also familiar with a pamphlet of twelve pages published as "Advance Sheets," *Bulletin of the Illinois State Board of Health* (circulated at the expense of the people of Illinois) issued (dated Dec. 31, 1909) about Jan. 22, 1910, containing a communication of the officers of the Board of Health, entitled "Illinois a Plague Spot in Medical Education, Medical Examination and Medical Licensure."

The reason for making any answer to the statements of the officers of the Board of Health is the same that inspired the Southern Illinois Medical Society in unanimously adopting the resolution, namely, dissatisfaction with results obtained in medical education, examination and licensure in this state. As citizens who desire to have our state occupy a leading position in all that goes to prevent disease, cure sickness and allay suffering and to have those licensed to do these things possess the most approved qualifications, we find it difficult to understand why the third state in the Union in population and importance should be placed in the

lowest rank in these respects, and this in a state containing several of the best medical colleges in the United States. Naturally the presence of such schools should elevate the average.

To adopt a resolution asking our officials why our fair state is behind her sister states in these matters would hardly seem the occasion for impugning the motives of either individuals or societies. There may be good and sufficient reasons for the present conditions, and the resolution merely asks the Board of Health to explain.

I have no reply to make to the personal attack and I have no personal criticism of any officer or member of the State Board of Health.

It was my privilege to accept an invitation to be the guest of the Southern Illinois Medical Society at the meeting above referred to and to read a paper on a subject having no connection with the matter of the resolution in question. This meeting was one of the most largely attended which this old and active organization has ever held, and at the time the resolution was presented there was a large attendance. The question of medical education in Illinois was brought out by Dr. J. L. Wiggins, President of the Illinois State Medical Society, at a dinner given to members of the Southern Illinois Medical Society. He introduced the subject by explaining that there had been a great deal of criticism of the standing of Illinois in matters of medical education and licensure and that the Secretary of the Board of Health was largely held responsible for existing conditions. He said that he thought the profession in general was much in the dark regarding these matters and he requested me to explain the situation. As far as I was concerned this was entirely unexpected and impromptu, but I stated briefly a few of the reasons, as they appeared to me, for dissatisfaction with the results obtained by the present executive officer of the State Board of Health. Later I found that it had been the plan of Dr. Wiggins and other members and officers of the society to have the Secretary of the Illinois State Board of Health present and ask him to answer certain questions in open meeting, but at the last minute word was received announcing his inability to be present on account of serious illness in his family. There was considerable discussion among the individuals of the Society regarding the failure of their plan, and after consultation among Dr. Wiggins of East St. Louis, Dr. Hamilton of Mt. Vernon and others it was decided, since no officer or member of the State Board of Health was present to answer questions, to present a resolution calling upon the board for an explanation of certain criticisms of medical education in Illinois. Upon request of Dr. Wiggins, I prepared the resolution in question, which Dr. Hamilton of Mt. Vernon presented, and at the time I have no doubt that he had a sincere desire to aid the cause of better medical education and to impress upon the Board of Health the necessity for more care in issuing licenses.

In this country of democratic institutions it is the privilege of the individual and the organization to ask public officials for information and explanations, and the acts of such officials are at all times the legitimate subject of honest discussion, and it is in this spirit that this communication is written. The public is vitally interested in maintaining good professional standards, and no amount of personal abuse should

deter us from demanding a full explanation of why our state should hold the position in medical education which she now occupies. One would think the progressive official would be glad to supply such information even before it is requested.

It is greatly to be deplored that the officers of the Illinois State Board of Health are unable, after eleven years of control of the department which is charged by law with the duty of determining what medical colleges are in "good standing" and what graduates should be admitted to practice, to give a satisfactory explanation of why Illinois should be published to the world as a "rotten spot" in medical education.

In brief, it is the duty of the Illinois State Board of Health to determine that the applicant for license is 21 years of age; is of good moral character; has had the necessary preliminary education; has a diploma from "a medical college or institution in good standing, as may be determined by the board," and has taken an examination properly conducted by the board in "those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States."

The reader will be interested in the following quotation from the report which Dr. A. D. Bevan, chairman of the Council on Medical Education of the A. M. A., made to the Association on June 4, 1906: *"It is evident from a study of the medical schools in this country and their work that there are five specially rotten spots which are responsible for most of the bad medical instruction. They are Illinois, Missouri, Maryland, Kentucky and Tennessee."—The Journal,* A. M. A., June 16, 1906, page 1853.

In the "Advance Sheets" referred to, there is a quotation from the published remarks of "a prominent medical educator" and a certain "essayist," in which the language is identical with that used by the Council on Medical Education in its report. It would have been more creditable to the officers of the Board of Health to have stated frankly that the "prominent medical educator" and the "essayist" were in reality the chairman of the Council on Medical Education, and that the language quoted was from its official report to the American Medical Association. It is plain that the weight of authority carried by such a report made it desirable to suppress the source of the language quoted.

This was not a mere statement of belief on the part of the Council on Medical Education, but is the result of a careful and painstaking investigation of the conditions in all states and is accompanied by comprehensive tables setting forth the details on which the statement is based. Every Illinois physician interested in the cause of medical education and licensure should study these reports of the Council on Medical Education and of his own knowledge decide whether he is satisfied with conditions in his state. While it wounds our pride to find our state has fallen behind in these matters, it is very important that all should recognize the situation in order to inaugurate proper corrective measures.

There is this to be said in defense of the present conditions: Recent progress in medicine has been so rapid as to be almost revolutionary and

it has required far-seeing and astute leaders to keep any state from falling behind. We are passing through a transition from medical schools established and maintained for the profit of members of the faculty and others, either directly or indirectly, to schools managed with an eye single to the quality of instruction and laboratory and clinical facilities for proper teaching. It has required officials possessed of a strong professional sentiment, fostered and led by high ideals, and prompt and resourceful initiative to place medical education beyond the reach of commercial and political influences. In the days of the late John H. Rauch, Illinois had such a leader and our state was in the front rank in medical education. In the absence of such leadership, we have steadily lost ground to the extent indicated by the above quotation from the report of the Council on Medical Education.

The law makes it the duty of the board to determine whether our medical colleges are in "good standing," that is, whether they have a faculty, buildings and equipment capable of giving a proper medical education, and the resolution simply asks why the board in Illinois has failed to do its plain duty under the law. If there are good reasons, it is no act of unfriendliness on the part of the people to ask for them.

Regarding examination and licensure in Illinois, the statistics from the Council on Medical Education show that in 1906 the states of Indiana, Kentucky, Missouri, Iowa and Wisconsin (bordering on Illinois and having identical conditions of population) collectively only examined 21 per cent. more applicants than Illinois, while they have a combined population 150 per cent greater. In Illinois the failures in the 1906 examinations were 8.4 per cent., while in the five states mentioned the failures were 25 per cent. That is, of those examined in these five states, 200 per cent. more failed to pass than failed before the board in Illinois, where the examinations were conducted by its Secretary. That this is not accidental for 1906 is shown by the fact that if we take the years 1903 to 1906, inclusive, the five states above mentioned examined 9 per cent. fewer applicants than were examined in Illinois alone, and of those examined the failures in Illinois were 5.9 per cent., while the failures in the other five states were 18.5 per cent.; that is, there were about 200 per cent. more failures in the five states mentioned than in Illinois during the four years.

In 1906 Illinois alone sent out 27 per cent. of all physicians registered under reciprocity in the United States, while she received only 6 per cent. In other words, Illinois sent out through reciprocity 300 per cent. more than she received. Is it possible that the low percentage of failures in examinations conducted by the Secretary of the Illinois board has anything to do with this discrepancy in medical immigration?

In explanation of this rush of graduates to be examined by the Illinois board, it has been suggested that Illinois sends out more graduates and naturally they are examined in the state where they graduate and then seek their locations under reciprocity. Let us see.

If we compare Illinois with Pennsylvania, New York, Maryland, Tennessee, Missouri, Ohio and Massachusetts, the seven states having the

next highest number of graduates, we find that these states had 300 per cent. more graduates examined at home than Illinois, but that the seven states combined furnished 23 per cent. less licentiates to register under reciprocity than did Illinois. In this connection it may be of interest to note that of Illinois graduates examined by the Secretary of our state board only 5 per cent. failed, while of the graduates of the seven states mentioned examined at home 15.5 per cent. failed—200 per cent. more than in Illinois. Any one interested can look up the figures on which these percentages are based. They are offered as a reasonable explanation of why the Southern Illinois Medical Society was well within, not only its rights, but its duty to its communities, in asking the Illinois State Board of Health to explain "why Illinois should bear the stigma of being one of the plague spots in this country in medical education."

JACKSONVILLE, Ill., Jan. 28, 1910. CARL E. BLACK.

THE ANNUAL MEETING OF THE STATE SOCIETY.

DANVILLE, Ill., Jan. 14, 1910.

Dear Doctor:—The Vermilion County Medical Society desires to call your attention to the State Medical Meeting in Danville, May 17, 18 and 19, 1910. Bear in mind this is to be the Sixtieth Annual State Meeting of your society. Careful attention is being given to every detail to make this the best in its history.

To make it so we need the cooperation of every member. We want yours!

If any medical gentleman of your acquaintance does not belong to your local society—without which he cannot become a state member—take an application blank and induce him to sign it. Then bring him along.

Welcome to Danville.

Fraternally yours,
STEPHEN C. GLIDDEN, General Chairman.
A. MERRILL MILLER, Chairman Publicity Committee.

VISITS TO SURGICAL CLINICS IN ENGLAND AND SCOTLAND.

THIRD LETTER.

NELSON M. PERCY, M.D.

Junior Surgeon to Augustana Hospital; Attending Surgeon to St. Mary's Hospital; Instructor in Surgery, College of Physicians and Surgeons.

CHICAGO.

VISIT TO MR. MORISON'S CLINIC, NEWCASTLE-UPON-TYNE.

Surgery of the Gall Bladder.—To reach the gall bladder Mr. Morison makes a transverse incision, beginning in center of right iliocostal space and extending upward and inward to edge of right rectus muscle. All the muscles are cut squarely off. The reasons given for this incision were

that it gives best access to the gall bladder and common duct; that the other abdominal organs are not brought into the field of the operation so much, and that it is safer in septic cases, because the drainage is directly downward and backward, and not up through the abdomen. I was told that a hernia has never resulted through such an incision. A rubber tube is employed for drainage. In cases of simple gallstones, the cystic and common ducts being normal, the gall bladder is not drained, but is closed with a purse-string suture.

Pancreatitis.—Mr. Morison believes that in every case of marked pancreatitis there is a small stone lodged in the ampulla of Vater. This stone cannot, however, always be found at the time of operation. He asserts that he has found it in many cases, but in two cases a stone was found at post-mortem, after a careful search at the time of operation had resulted in failure.

Hernia.—After the hernial sac has been thoroughly loosened, a pair of curved hemostatic forceps is passed inwards through the external oblique and internal oblique muscles at a point about 7 cm. above the internal inguinal ring. The fundus of the hernial sac is grasped by the forceps and the hernial sac pulled upwards and brought out through the abdominal muscles and sutured to the external oblique. The rest of the operation is completed by the Bassini method.

Carcinoma of the Tongue.—In carcinoma of the tip of the tongue he made an excision of the distal one-half of the tongue, and in a case of carcinoma on the side of the tongue made excision of one lateral half of the tongue, and in both cases expected to remove all the lymph nodes in both sides of the neck two weeks later.

Ulcers of the Face.—The following point in diagnosis was made. Tubercular and specific ulcers nearly always appear near the middle line of the face and forehead where there is the least blood supply. Carcinoma is just as likely to appear in the vascular as in the non-vascular areas.

Myoma of the Uterus.—I saw several of these cases, and they were operated very well. I also saw many cases of ovarian cysts.

Psoas Abscess.—The incision was begun a little below the anterior superior spine of the ilium and continued upward along the crest of the ilium, cutting through all the muscles down to the peritoneum. The latter was pushed forward and the abscess freely incised. The abscess cavity was sponged thoroughly with dry gauze, removing all pus and shreds of tissue. A small piece of bone is usually found in the cavity and removed, as was done in the case which I saw. When the abscess cavity is perfectly dry, the wound is closed completely without drainage. The cavity becomes obliterated and never refills, but occasionally a superficial tuberculous infection of the skin occurs. Mr. Morison and Mr. Turner both said that the results are very good. Two cases were presented, one two months and the other six months after operation. In each the result was perfect.

In ununited fractures and fractures which cannot be held in good position by splints, a bone clamp invented by Mr. Willian is used. A

description of this method will appear next month in the *Annals of Surgery.*

Congenital Stenosis of the Pylorus.—A baby, 10 weeks old, was brought in for operation, but its general condition was so bad that operation was postponed. The child died four hours later. Post-mortem examination revealed a hard mass completely obstructing the pylorus. The stomach was small and it was greatly thickened. Regarding the differential diagnosis in these cases, Mr. Morison made the following statement: "There is no other condition in infants which causes persistent vomiting and constipation. All other conditions which cause vomiting in babies also cause diarrhea."

VISIT TO MR. GREY TURNER'S CLINIC.

Mr. Turner is a most enthusiastic surgeon. He is a thorough pathologist and has collected and prepared a large museum of gross pathologic specimens which he uses in teaching gross surgical pathology in the Durham University located at Newcastle. His work is similar to Mr. Morison's, but more Americanized. He brought back and employs more American methods than any English surgeon who has visited America. His technic in gall-bladder work, in hernia operations and in the treatment of psoas abscesses is the same as that employed by Mr. Morison. Both he and Mr. Morison perform gastro-enterostomies without the use of clamps. They do not use the Connell stitch, but employ what is known as the "post-mortem stitch." The needle is passed from within out each time, and it seems to fold the edges in very well. It can be done quickly, and they believe it is certain to control all hemorrhage.

Carcinoma of Cervical Portion of the Esophagus.—Two weeks ago a gastrostomy had been made. Yesterday the carcinomatous mass was excised, including 7.5 cm. of the cervical portion of the esophagus. The lower end of the esophagus was ligated. The upper end was left open and the wound was drained very freely.

Idiopathic Dilatation of Sigmoid and Colon.—Patient aged 10 years. The enlargement and elongation were entirely confined to the descending colon and sigmoid. Mr. Turner excised the enlarged bowel, fifteen inches in length, closed both ends and made a lateral anastomosis without the aid of clamps.

VISIT TO MR. RICHARDSON'S CLINIC.

Mr. Richardson performed some very nice operations, one of which was especially interesting. He had operated upon a man for strangulated hernia eighteen months ago, at which time the intestine did not look at all bad. For the past twelve months the patient has had symptoms of intestinal obstruction. At the second operation, which I saw, two strictures, eight inches apart, were found in a loop of the ileum. One stricture was very tight and felt like a thickened contracted pylorus.

Retroverted Uterus.—Made median abdominal incision. Picked up round ligaments two inches from the uterus, cut them off at this point,

then pulled the proximal end up through the muscles of the abdominal wall and sutured to the external oblique fascia. He made no provision against the occurrence of intestinal obstruction which might occur by a loop of intestine getting caught around one of the round ligaments.

VISIT TO MR. STILES' CLINIC, EDINBURGH, SCOTLAND.

Mr. Stiles removed a pin which had lodged in the colon of a child at a point opposite the iliac crest. The old classification as to the division of the colon has been discarded by him. He does not recognize the word sigmoid colon. From the splenic flexure downward he divides the colon as follows: descending colon, iliac colon and pelvic colon. The iliac colon begins at the crest of the ilium, at which point there is a distinct angle in the gut. The pelvic colon begins at the pelvic brim, where there is another angle. It is at these two points at which foreign bodies are most likely to lodge.

Torticollis.—Mr. Stiles does the Robert Jones operation; that is, he simply divides both sternal and clavicular portions of the sternocleidomastoid muscle near their insertion and allows the ends to retract, controls hemorrhage and sutures the skin. He considers nearly all cases congenital, and doubts whether the rupture of the sternomastoid muscle during delivery is a common cause of torticollis.

Hernia.—All cases are operated on, children as well as adults. He prefers to operate at the age of five or six months. The reasons given were that many cases in children treated without operation recur in early adult life; the period of treatment is much longer without operation, and the children leave the hospital on the eighth day after operation. In infants the sac is simply excised high up. In older children the Ferguson operation is performed. No dressing is ever applied to hernial wounds. The arms and legs are fastened and a tent-like support is placed over the patient to keep the bed clothing away from the wound. I saw six of these wounds and they were perfect.

Congenital Dislocation of the Hip.—In a majority of cases a tenotomy of the adductor muscles is made about two weeks before reduction is attempted, which is done by the Lorenz method.

To Prevent Peritoneal Adhesions.—In abdominal cases in which a great many adhesions have been broken up, or if conditions are such that adhesions are expected to form, Mr. Stiles is using Wilke's vaseline oil. It is a bi-product of vaseline. Wilke has carried on an extensive series of experiments on rabbits with various oils and finds that vaseline oil is the only one which gives satisfactory results. Mr. Stiles has used it in a few cases, and apparently with excellent results. In cases in which he separates a great many adhesions, he pours about two ounces of this oil into the abdomen and with his fingers rubs it over the surface of the intestines in that area. Mr. Stiles said: "This is one of the good things which I wish you would take home with you." Mr. Wilke will have an article on this subject in *Surgery, Gynecology and Obstetrics* next month.

Anesthesia.—Mr. Stiles uses chloroform in young children, except in septic cases, for in these cases chloroform poisoning is apt to occur. His

results in septic abdominal conditions are very much better with ether than with chloroform. In adults he uses open ether entirely.

Undescended Testicle.—I saw Mr. Stiles perform three of these operations. He employs the Bevan operation, but seems to do it better than I have ever seen it done before. He is an excellent anatomical surgeon.

Clubfeet.—In most cases a tenotomy of the tendo Achillis and plantar fascia is done first. In bad cases over three years old a wedge-shaped piece of bone is removed from the astragalus.

Neuralgia of the Inferior Dental Nerve.—In this patient Mr. Stiles resected a portion of the inferior dental nerve, doing the operation through the mouth. If the patient does not object to the scar, he performs the external operation. When the internal operation is performed, Mr. Stiles disinfects the mouth for about four days previous to operation to prevent sepsis, which, when it does occur, is a very annoying condition.

Prostatectomy.—In case the prostate is large the suprapubic route is preferred, but if it is small and hard the perineal route is used. If the prostate is large and the bladder distended with a considerable amount of residual urine, Mr. Stiles does the Lynn Thomas combined operation, draining from below. He removed the largest prostate I ever saw. It was the size of an infant's head and weighed one pound and six ounces, had rotated upward, the upper end being wedged underneath the promontory of the sacrum. It was with considerable difficulty that the gland was dislodged from the pelvis. Drainage was established above and below.

Mr. Stiles is an excellent operator. He uses very sharp knives, and makes beautiful but rapid dissections. He protects the head and mouth, but wears gloves only in septic cases. In preparing the hands for operation, he washes them twice with a tincture of green soap to which some lysol is added. The hands are then washed with a solution of lysol, after which they are immersed in a ½ per cent. carbolic solution, which contains one ounce of glycerin to a quart of the solution. Lastly, they are washed with lysol and then with sterile water.

VISIT TO MR. ALEXIS THOMPSON'S CLINIC.

Mr. Thompson is a brilliant operator. In appendectomies he makes the incision lower down and nearer the anterior superior spine of the ilium than McBurney's point. He says that this incision is more often over the appendix than one through McBurney's point.

VISIT TO MR. CAIRD'S CLINIC.

Here I saw a gastrostomy for carcinoma of the esophagus. Local anesthesia was used with practically no discomfort to the patient. He performed practically the same operation that has been made at the Augustana Hospital for several years, except that the incision was made in the median line.

VISIT TO MR. WALLACE'S CLINIC.

I saw Mr. Wallace do some excellent work. In a case of carcinoma of the lower jaw he removed one-half of the jaw together with a portion of

the floor of the mouth, and removed all of the lymph nodes from same side of the neck. The dissection was beautiful, the operation was performed quickly and with very small loss of blood.

VISIT TO MR. GRAY'S CLINIC, ABERDEEN, SCOTLAND.

A case of polypus within the small intestines. The patient, aged 33 years, for the past three months had had symptoms of intestinal obstruction at various times. At operation an intussusception of three feet of the small intestine was found, and also a polypus the size of an English walnut was attached to the mucous membrane of the small intestine at a point ten inches distant from the apex of the intussusception. The latter was reduced and no gangrene was found. Four inches of the intestine, including the polypus, were removed. An end-to-end anastomosis was made, the first row of stitches being interrupted Connell stitches. Both ends of the intestine were cut obliquely, taking away slightly more on the outer than on the mesenteric side. In all such cases Mr. Gray gives eserin hyperdermically the day following operation to stimulate intestinal peristalsis.

Tuberculosis of the Testicle.—This patient had had one testicle excised six months before, at which time some tuberculous tissue was removed from the opposite side of the scrotum. A sinus had persisted, so now the remaining testicle was excised. Mr. Gray stated that "he has seen two cases of tuberculosis of the bladder complicating tuberculosis of the testicles in which the former condition subsided after castration." He offered an explanation as to why the kidney frequently becomes infected from a tuberculosis of the testicle. "The testicle is formed outside of the kidney and as it descends it brings its own lymphatics with it, making a direct lymphatic connection between these two organs."

Varicose Veins.—Mr. Gray uses the Babcock probe instead of the Mayo instruments. The vein is picked up above, cut off and the proximal end is ligated. The probe is inserted into the distal end of the vein and pushed downward to a point near the foot. An incision is made through the skin over the end of the probe, around which the vein is ligated. The vein is now stripped away, the procedure being carried out rapidly and with ease every time.

The Opsonic Index.—No effort is made to determine the opsonic index, but the clinical symptoms are used as the guide for the administration of tuberculin. Patients are vaccinated as a prophylactic measure before operations upon the mouth, and also before abdominal operations in which the intestinal tract is to be opened. In mouth cases mixed antitoxin for streptococci and staphylococci are given. In abdominal cases he administers an anticolon bacillus serum.

Lane Bone Plates.—Mr. Gray is very enthusiastic over the use of these metallic plates in cases of fractures and has used them frequently during the past 18 months. He said that it shortens the period of disability and does away with any permanent loss of function. So far he has not had to remove any of the plates.

A Case of Dysmenorrhea.—Varicosed veins were found in both broad ligaments. A section of each broad ligament was excised, thus disposing of the enlarged veins, and at the same time severing the nerve supply to the ovaries. His results from this procedure have been good.

Gastroenterostomy.—The posterior gastroenterostomy done with needle and thread is the operation of choice. The opening is always made in the pyloric end of the stomach. Mr. Gray has conducted a number of experiments upon the stomach, using bismuth, then making observations with the fluoroscope and also taking *x*-ray pictures. He does not believe in the theory that food prefers to pass through the pylorus in preference to a gastroenterostomy opening.

Acute Osteomyelitis.—Whenever possible a subperiosteal resection of the affected portion of the bone is made and the periosteal cavity is filled with bismuth paste. Several *x*-ray pictures of such cases were presented showing excellent results.

Handly's Lymphangioplasty.—This is performed in cases in which from any cause the lymphatic circulation has been blocked in the axilla or groin, resulting in edema of the extremity. A long probe-like instrument is inserted underneath the skin at the wrist (in case the arm is involved) and passed upward beyond the shoulder into the neck. A small incision is now made over the upper end of the probe to which five or six strands of fine silk are fastened. The probe is withdrawn, pulling the silk threads into the channel made by the probe. This silk is left in place and the two small buttonholes in the skin are sutured. Four or five such channels are made, being exceedingly careful as to asepsis. I saw two of these cases, and the results were quite satisfactory.

Breast Amputations.—The pectoralis minor muscle is used to cover up the axillary vein. The muscle is severed at its costal attachment and is held upward during the axillary dissection. When this is completed the muscle is stitched downward and backward around the vein. Mr. Gray did some very nice gall-bladder, appendix and pelvic work. He is an excellent general surgeon.

JENNER MEDICAL COLLEGE NOT AFFILIATED WITH GRACE HOSPITAL.

Grace Hospital (Incorporated), 308 S. Sangamon Street.

To the Editor:—The Jenner Medical College is running without hospital affiliation and has done so since December, 1909, the Grace Hospital having requested them to discontinue their clinics.

Yours truly, (Signed) M. D. Bates, Treasurer,
1605 Van Buren Street, Chicago.

THE FEE SPLITTING GAME.

We have received the following letter from a worthy practitioner, a member of one of our local societies, who does not wish his name mentioned in connection with the correspondence, and we therefore print it

anonymously with the hope that some of our members will discuss the matter from this point of view:

Jan. 18, 1910.

Dear Doctor:—I have been planning for a long time to write to you as editor of our journal in re the "fee splitting game" to give a point of view that has been overlooked in great measure, and if I am a little tangled in my argument you will pardon me because I am writing off-hand, extemporizing.

I represent in type the "average" practitioner. While I feel that the present method of charging is unfair to the family physician, who in most instances has made a worthy effort to make himself competent, I at the same time recognize that I have no business with the other fellow's charge and that he is entitled to all that he can get if he delivers the goods.

I (and in using the pronoun I am using it in the sense of the great bulk of country doctors) am not quarreling about a division of the fee. *I want to make my own fees,* I want when I die to leave something of an estate for my family. I do not want to work as hard I do now when I am sixty. The gentle and just art of getting good fees for *every-day work* is unknown to me. One dollar and a half a call and $1 for office consultations and $10 for obstetrics is the rut we are all in. I feel that I am rather well trained, certainly I have had the opportunity and spent enough money to get a training. But no where in all that time has any one told me how to look after my business. It is all very well for the teacher to tell the young artist about "scientific" blending of color, but what about the psychology of impressing the buyer as to the value of the service and the art of "asking the fee?"

I have received more practical and real help from a broken-down old quack whom I befriended in his last days than from all the teaching I ever heard. I mean in a proper way.

For instance, one point he taught me: He told me that when a man or woman came to the office for advice they were sick, or thought they were sick, which was the same thing from the patient's point of view, and that they were prepared to give up good money to be relieved, and that it was up to me to relieve them, and as quickly as possible. That I should take interest in the case and go over them, to "examine them;" take a little more time, etc., and to charge extra for it.

Now to the point of my letter. Why not interview some of our senior members who have accumulated $8,000 to $10,000 practices doing regular family physician's work? Tell us of the little niceties of the work; how they get two dollars instead of one; how they made it possible to accumulate such large incomes and yet be considered by their patients as charging reasonable fees.

I do not want to be considered as discussing the unusual fees. Most of us do not have appendicitis cases every day in the week. We do have our chronics, from headache to Bright's, etc.

If some one will only tell us how to improve our condition and utilize our possibilities as they exist every day, we will not be envious of the

"high brows" who get up in the society and talk ethics and generalities. I never did and probably never will receive $100 fee for any one consultation. What we want is to get just a little more out of each of our cases, and at the end of the year feel that we can afford at least a short vacation.

I hope you will interpret my meaning; I certainly have not expressed myself well. Help the "average man," the specialist has proved himself able to take care of himself. I don't want his money; it isn't on the square. I do feel that I am not appreciated and do not know how to improve myself.

Thanking you in advance, I remain, Yours truly, ———.

CHANGE OF LOCATION.

Dr. Hamilton, Galesburg, has removed to Alliance, Neb.

Dr. A. Hostetter has removed from Rockford to Mt. Carroll.

Dr. L. M. Bowman has removed from Alton to Snyder, Okla.

Dr. H. C. Kariher has removed from Seymour to Champaign.

Dr. J. Frank Friesen, Chicago, has removed to Buehler, Kans.

Dr. John Weir, Marshall, has retired from the practice of medicine.

Dr. G. W. Hochrein has removed from Topeka, Kans., to 3000 Indiana Avenue, Chicago.

Dr. C. F. Burkhardt has removed from Effingham to 215 Madison Avenue, Covington, Ky.

Dr. Ira W. Miller has removed from 1203 Wells Street, Chicago, to 70 Myrtle Street, Saybrook.

Dr. George A. Darnell has removed from Woodstock to 105 West Douglas Street, Wichita, Kans.

Dr. T. M. Dromgold has removed from 7011 Kimbark Avenue, Chicago, to 518 West Jefferson Street, Ottawa.

Dr. R. D. Cruikshank has removed from Boone and entered into partnership with Dr. N. L. Pollock at Danville.

COUNTY AND DISTRICT SOCIETIES.

ALEXANDER COUNTY.

The Alexander County Medical Society held a meeting Dec. 30, 1909, in the Commercial Club rooms, Cairo, Ill., and elected the following officers, all of Cairo, for the ensuing year: Dr. S. B. Cary, president; Dr. James M. McManus, vice-president; Dr. James W. Dunn, secretary-treasurer. The following board of censors was constituted: Drs. W. F. Grinstead, W. C. Clarke and G. H. McNemer. The committee on public health and legislation was named as follows: Drs. Samuel Dodds, J. W. Dunn and James M. McManus. After the election of officers a general discussion of matters pertaining to the welfare of the society was had, and several of the members related interesting personal experiences. The next meeting will be held on the fourth Tuesday in January, at which time Dr. E. E. Gordon will present a paper.

JAS. W. DUNN, Secretary.

BROWN COUNTY.

At the regular quarterly meeting of the Brown County Medical Society, held at the Court House in Mt. Serling, Ill., Wednesday, Jan. 5, 1910, the following officers were elected: Dr. D. W. Owens, Hersman, president; Dr. F. E. McGaun, Mt. Sterling, vice-president; Dr. Wm. Parker, Mt. Sterling, secretary-treasurer; Dr. J. G. Ash, Hersman, delegate to state convention; Dr. F. E. Gaun, Mt. Sterling, alternate; Dr. E. C. Allworth, Mt. Sterling, Council.

WM. PARKER, Secretary.

BUREAU COUNTY.

The thirty-second semi-annual meeting of the Bureau County Medical Society was held at the City Hall, Princeton, Thursday, Nov. 11, 1909, with W. C. Griswold, second vice-president, in the chair. The following members were present: M. N. Blackburn, M. J. Coverny, J. H. Franklin, O. J. Flint, W. C. Griswold, W. M. Kaull, A. E. Owens, H. M. Owens, A. S. Rummell, H. D. Steele, C. C. Scott, S. C. Mason and J. D. Trumbauer: Visitors: J. H. Bacon, Peoria; E. P. Cook, Mendota; A. G. Downer, Princeton, and E. H. Butterfield, Ottawa. The minutes of the preceding meeting were read and approved. The report of the secretary and treasurer for the preceding meeting were read and approved. Dr. Kaull reported for the committee on necrology on the death of Dr. C. A. Palmer and presented the following:

Charles A. Palmer, M.D., Chicago Medical School, 1876. A graduate of the Princeton High School, class of 1873. In the same year he began the study of medicine in the office of G. W. Crossley, of this city, and in due time entered Chicago Medical School, medical department of Northwestern University, from which he was graduated in the year 1896. He was appointed intern in Mercy Hospital by reason of passing the requisite examination successfully. In 1877 he commenced practice in Princeton, where he soon established a good, lucrative business. Dr. Palmer was well up in his profession, keeping abreast of its literature, progress, and new methods of treatment; was a man of genial nature, approaching the bedside with a pleasant smile, and may be, if a proper subject, a little pleasantry.

I met him frequently in counsel, and was associated with him for several years on the local pension board of this county. I knew him when a boy, being

the family physician in his father's family. He had strong elements of success about him to gain him patients and make them stick, when once he was professionally employed by people.

I would advise that the Bureau County Medical Society in session adopt suitable resolutions expressing its high esteem for our deceased member, Dr. C. A. Palmer, extending its sympathy to bereaved wife, family and friends.

Dr. Owens moved that the report of the Committee on Necrology be adopted and that the president appoint a committee to prepare resolutions, the same to be engrossed and presented to the family. Motion was carried.

The acting president appointed the following committee: Dr. W. M. Kaull, Dr. B. F. Landis, Dr. M. H. Blackbrun and Dr. A. E. Owens.

In speaking of Dr. Palmer, Dr. Owens stated that he had been the first president of the Medical Society, elected sixteen years ago, and that there had scarcely been a meeting which he had not attended and had always taken an active interest in the discussions. Dr. Palmer had been mayor twice. Dr. Owens said that he had been closely identified with Dr. Palmer for twenty-five years. He showed great kindness to young men in the community and was a good business man, one of the best secretaries of the Board of Agriculture that it ever had. He took great interest in the welfare of the city and took particular interest in the sewerage system, and one of the distressing things on his mind during the last months of his life was in regard to the menace to the community of the defective sewerage and the use of cesspools and deep wells in the same vicinity. Almost the last conversation of any length with any one was on this subject.

The treasurer's report showed total receipts $122.93, and balance on hand November 11 $26.69. The report was approved as read.

The afternoon session was called with Dr. Griswold in the chair. A letter was read announcing a lecture bureau; the same was referred to the Committee on Programs. Dr. Trumbauer then read a paper on "Tetanus," which was followed by a paper on "Cancer of the Lip," by Dr. Cook of Mendota, a paper on "Pellagra," by Dr. J. H. Bacon of Peoria, and "The Early Diagnosis of Pulmonary Tuberculosis," by Dr. Butterfield of Ottawa.

The election of officers for the ensuing year was as follows: President, Dr. C. F. Horner, Tiskilwa; first vice-president, Dr. W. C. Griswold, Princeton; second vice-president, Dr. J. F. Lewis, Depue.

Adjourned.

Oliver J. Flint, Secretary.

TETANUS.

L. D. Trumbauer, M.D., Wyandot, Ill.

The mortality of traumatic cases is not less than 80 per cent. In others under 50 per cent. The germ of tetanus does not enter the circulating blood, and hence is not found in the various organs of the body, neither do they grow upon superficial wounds of the body because of their anaerobic nature. The bacillus produces a toxalbumin of frightful potency, an idea of which may be gained by comparison with strychnia, which is poisonous in doses of 0.30 milligram, while the toxalbumin of tetanus, requires only 0.23 milligram. Every symptomatic feature may be produced by this toxalbumin without the presence of the bacilli.

Predisposing causes. Any wound or breach of surface may develop the disease, but in a great majority of cases it may follow a severe contusive wound into which some foreign substance containing garden soil, street sweepings, manure or putrefying fluids, has been forced.

Report of a case: Mr. S., aged 45 years, a farmer, sustained, on the evening of Nov. 7, 1903, a compound fracture involving the third toe. Portions of wool, gravel, leather, and a variety of other substances were removed, and the wound was cleansed with a 25 per cent. solution of phenol in water and the parts placed as closely in apposition as possible. In seven days a fairly well developed trismus was seen associated with extreme backache, vague pains in the legs and excruciating pain in the primary wound. This was at once reopened freely and again swabbed out with phenol, a drainage introduced and the family made acquainted with the facts of the case. Counsel was granted at once. Bacilli treatment was

at once begun, and at intervals of three to six hours a 5 per cent. aqueous solution of phenol was hypodermically injected in various parts of the body throughout the course of the disease. Antitoxin was injected subcutaneously twice to four times daily, 10 c.c. being used at an injection. The nervous system all through the disease responded quite pronouncedly to the anitoxin. Muscular contractions or rather exacerbations of the tonic spasm were quite frequent, and at these times great pain was complained of in the abdomen. Opisthotonus now supervened, great restlessness and excruciating pain accompanied it, necessitating the use of alcohol baths with massage and the hypodermic use of morphin and atropin, combined with 30 grains chloral hydrate at intervals, governed by the exigencies of the case. The opisthotonus finally yielded after a few brief moments, when the extreme exhaustion, accompanied by profuse perspiration, would appear, when after a variable time the patient would succumb to a short half hour of restless slumber, only to be again awakened by the extremely painful muscular contractions and would then again go through the same cycle, when hot applications, massage and the judicious use of sedatives were again invited to the field. Voiding of the urine was always extremely difficult and at times impossible owing to the very tonicity of the spasm, when the catheter was inserted and a variable amount of urine obtained at different times.

The pulse and respiration now became quite rapid and irregular, ushering in a right sided pneumonia, with all its usual coincident features. As this paper does not deal with pneumonia, the individual symptoms of this complication will not be dealt with. Suffice it to say that this complication ended in complete recovery, while the tetanus itself still seemed to be at its maximum intensity. Thoracic oppression, dyspnea and at times decided cyanosis occurred, while all the reflexes were decidedly exaggerated and the sensorium was normal. Throughout the attack the febrile movement, barring the influence of the pneumonic process, was very moderate, ranging from 99.2 to 102 F. Finally there was a gradual diminution in the intensity of the spasm, the ever present muscular rigidity gradually became less marked, permitting greater ease in breathing, less cyanosis and finally voluntary urination was established.

Some not uninteresting features now made themselves apparent. Coincident with the use of antitoxin, a well pronounced erythema and urticaria with desquamation was observed, the latter continuing about ten days after the use of the antitoxin was abandoned. Complaint on the part of the patient invited the attention to the teeth, and both the lower first molars were found loose and cracked from above downward through the center, showing the extensive muscular force brought to bear in trismus. In support of this tooth story the report of Anders and Morgan is cited. In their collection of 1,201 cases, one case of trismus was found so great that the teeth were crushed down to their roots. In another fracture of the spinous processes of the vertebrae resulted from these severe convulsions.

Prognosis: Late appearing cases following an injury give the most favorable prognosis. The prophylaxis is the great consideratum. Any breach of the surface or solution of continuity, whether a puncture or a contusion, should be cleansed with phenol from 25 to 50 per cent. solution. At the first symptom of tetanus, serum should be injected and its action maintained by discriminate repetition. Other therapeutic measures and other methods for the control of the various nervous and muscular features characteristic of the disease should be adopted. Prominent among these are morphia, chloral hydrate, chloroform and dionin.

CANCER OF THE LIP.

E. P. Cook, M.D., Mendota, Ill.

1. Etiology.—No evidence of hereditary predisposition (Stokes). Occupation of no influence (Rowntree). Wound or abrasion may be starting point of disease (Fricke). Smoking, especially a clay pipe, is important factor. Pipe with short stem gets very hot, dangerous to hold in mouth. Cigars and cigarettes less dangerous to one spot. Usually thought that male liability due to smoking, but

same sexual liability noted in countries where women smoke. Of Warrens' four female cases, three were smokers. History of smoking in only 1 to 80 female cases (Rowntree). Sanitary condition of teeth and mouth a factor. Lower classes chiefly (Stokes) well-to-do classes escape because they do not smoke clay pipe and keep teeth in better condition.

Male Sex: Twenty in men to 1 in women (König); 4 cases women in 73 (Warren); 90 cases women in 1,264 (Fricke); 233 cases men in 241 = ratio 29 to 1 (Rowntree).

Age: Over 50 years (50 years in Middlesex Hospital); over 50 years (Stoker in 350 cases). Males average 56.4 years (29 to 81 years) (Rowntree). Females average 50 years.

2. Frequency.—2.72 per cent. of all cancer cases (Rowntree); 1 case in 50 males, 6.8 per cent. (Rowntree); 1 case in 714 females, 0.14 per cent. (Rowntree).

3. Pathologic Anatomy.—Carcinoma of lip arises at juncture of the mucous membrane and skin, but may begin at some distance from margin in either skin or mucous membrane. Origin from mucocutaneous junction, 68 per cent.; origin from red line, 24 per cent.; origin from buccal mucous membrane, 6 per cent.

Location: Lower lip, 34 times to upper (Rowntree); upper lip, 63 in 1,193 cases (Fricke); right and left sides equally (upper lip 2 in 8 female cases); six times more common at side than in center of lip. "Cancer usually begins as indurated area which soon ulcerates, but induration may be preceded by a crack or fissure or eczemous condition of the margin of lip." (Senn.)

4. Metastases.—Lymph nodes involved in the following order: Submental, submaxillary, cervical. Glandular infection late in upper lip cancer, then first noted in submaxillary glands. Lymph nodes noted clinically usually in 46 per cent. Gussenbauer long ago noted gland involved in 29 to 32 cases. Lymph nodes involved often present when primary lesion is not greater than hazel nut. In one case metastases was in gland when sore on lip had lasted only six weeks (Fricke). Diseased nodes cannot be always palpated. Palpable in most cases, especially when examination is made with counterpressure in mouth in right places (Dowd). Microscopic examination necessary to decide if fat or glands contain areas of cancer. Submaxillary glands may enlarge from septic absorption from ulcer before carcinoma metastases has occurred. Consider this possibility in deciding if case is inoperable on account of involving the gland.

5. Prognosis.—Fifty to 60 per cent. cured by operation. Fricke: Eight per cent. operative mortality; 32 per cent. recurrence of growth or metastases; 60 per cent. permanent cure. Cheyne: Forty per cent. cured. Prognosis depends on gland involved. If jaw is involved, contraindication to operation. If floor of mouth involved, almost hopeless to operate (Stoker). Repeated operation justifiable in recurrence in cheek or lymphatic structure (Stoker).

6. Technique.—Wide removal of initial with removal *en bloc* of glands anatomically related to carcinoma area, together with accompanying fatty tissues.

Avoid pressure on afflicted region during operative manipulations on account of danger of squeezing cancer cells out into neighboring structures (Seidel).

Preliminary cauterization with carbolic acid of ulcerated surface must not come in contact with healthy tissue.

Incision: V-shaped incision suitable if growth involves less than one-half of lip. If more than one-half lip, remove entire lip (Teska). Vertical cut from chin to thyroid cartilage and cross cut on each side along lower margin of body of inferior maxilla (Cheatle). Wide rectangular incision (Grant).

Fricke: Goes two-fifths inch wide of infected tissue. Da Costa: Goes one-half inch wide of obvious disease; deformity preferred to recurrence. Ligation of duct of submaxillary saliva glands (Wharton) not necessary. Ligation of facial vessels may cause temporary edema of face. Operation of lip alone under cocain anesthesia.

Suturing Lip Wound: Silkworm-gut sutures passing through mucous membrane down but not through cutaneous surface and tied within the mouth. Approximate skin edge with fine silkworm-gut suture or horse hair. Old method of hare-lip pins obsolete.

Drainage: Perforated drainage of lower lip for 24 to 36 hours. Adhesive strapping to relieve tension on lip wound. Bilateral or unilateral removal of glands.

Cutting through skin, superficial fascia, platysma myoides and deep fascia exposes mylohyoid muscle. Pull mylohyoid muscle well forward, exposing submaxillary salivary glands. Loosen or draw down gland to expose upper anterior surface and remove nodes which regularly lie above it. If glands infect and adhere to salivary gland, remove it, but it is seldom infected. Retract posterior part under jaw and inspect thoroughly under margin of jaw as far back as parotid gland. Often two or three nodes back of the submaxillary gland which should be removed. Retract anterior part of wound and dissect forward to submental nodes usually two or three submental nodes lying one-half to three-quarters of an inch below symphysis menti between anterior bellies of two digastric muscles. If nodes beneath jaw are infected examine deep chain of lymphatics which accompany interior jugular vein. Can reach upper part of this chain through incision, but if necessary to remove nodes from lower part of chain make incision along course of carotid (Dowd).

Only structure to preserve hypoglossal nerve lies on hypoglossal muscle covered by mylohyoid in front.

X-ray treatment indicated, if at all, only in cases of superficial type. A question in operative cases. Little or no effect on glandular deposits of squamous carcinoma (J. Hutchinson).

Question of Radical Operation: Although many patients do recover from whom the lymph nodes are not removed, many others die because they are not removed (Dowd).

On account of liability of carcinoma to develop, every ulceration which does not heal soon should be removed.

There have been about 150 cases in the Peoria Hospital for the Insane. These cases have all been among the insane of an average of fifteen years' standing, and an average of about fifty years of age. There must be a prepellagra stage to the disease, and this is what we are looking for to find out what the predisposing conditions are that may be avoided and what are the prepellagrous symptoms so that we may be able to prevent it in those who would otherwise have it.

The treatment and relief of symptoms temporarily. Some believe that blind staggers in horses is identical with pellagra in man, and if that is the case the serum of those horses that recover might be curative. This is a line that needs to be worked out.

That mouldy corn may be the guilty cause means much to the corn-bearing states. It does mean that we should be more careful in the handling of so important a food product. The country and state government should have a commission appointed to work out a safe method of caring for corn while it is being husked and stored. Until this is done our corn will be under a ban, for who can tell what is disease producing. This is one of my especial points. The other is that all should be on the lookout for this disease, for it is probably to be found in every almshouse and insane asylum of our state. We are as yet to be educated in regard to its prevalence, cause, and cure.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

E. H. Butterfield, M.D., Ottawa, Ill.

Dr. Butterfield, in his paper on the early diagnosis of pulmonary tuberculosis, quoted Gehardt as expressing himself: "I know cases in which bacilli were not found for months or only in the sixtieth specimen, but when the diagnosis of tuberculosis was established by examination of the chest."

Fichorst says: "Now and then one certainly finds cases in which no tubercle bacilli are found in the sputum, in spite of the undoubted existence of pulmonary consumption." Turban says: "Clinically the first stadium of tuberculosis of the lung may be demonstrated before bacilli appear in the sputum." In commencing tuberculosis of the lung anatomical changes are of such kind that the tubercle bacilli actually present in the tissues can find no means of exit while the foci are

large enough to be demonstrated by percussion and auscultation. The earliest evidence of the disease may be obtained from physical examination. The tubercle bacilli may lie dormant though viable in an unsusceptible host for an indefinite time, and tuberculosis may develop when certain weakening influences come into the human economy. This may be at the time of the invasion of the bacilli or many years later. Apical tuberculosis may remain quite symptomless during life, even though in an advanced stage. In general, the first evidence is when the foci soften and invade a bronchus, *i. e.*, when the tuberculosis, until then closed, is now open.

Symptoms of early tuberculosis of the lung: disturbance of circulation, condition of the blood and digestive organs, of the nervous system, pallor, fatigue, poor appetite, perhaps nausea, irregularity of the bowels, loss of flesh, brittleness of the nails, dryness of the hair and skin, irritable weakness of the heart, and vasomotor system. The pulse is usually persistently frequent or may be very inconstant, rising from 70 or 80 to 100 or 120 or even more on the slightest mental or bodily excitement. May show slight elevation after principal meals and considerable rise after moderate exercise. Less common is a high morning temperature, but this sometimes approaches the evening one or may exceed it.

Very frequent pain is a marked symptom. Not so much pleuritic pain at the seat of the disease, but all over the lower lobes of the affected side, occurring as a dull boring or stabbing pain and radiating down the arm. The cough may or may not be accompanied by expectoration. Where tuberculosis commences insiduously a cough sometimes precedes expectoration by months or years. The quantity and character of the sputum usually depends on the extent to which the air cells and bronchial tubes are involved.

Hemorrhage may occur without the subsequent presence of tubercle bacilli. Hemoptysis usually appears in the initial state. Many patients are especially liable to attacks of catarrh, inflammation of the whole respiratory tract, laryngitis, bronchitis, pneumonia and pleurisy.

Mixed Infection: Local disease affecting the respiratory tract may smooth the way for tuberculosis. Without the assistance of a mixed infection the disease may be widely disseminated from a small nodule via a bronchus or by the lymph or blood vessel; it may follow hemoptysis.

Physical signs of early tuberculosis of the lung: Inspection often reveals valuable information. Very early the affected apex begins to lag behind the other in inspiration; there may be also a slight retraction or wasting of the muscles over the scapula, this giving a prominence to scapular ridge on the affected side. The supra and subclavicular fossa may be depressed and the clavicle consequently more prominent. Often associated with retraction of the lung. Palpation not of great value.

Percussion: Results of positive value may often be obtained from this method.

Auscultation of the lung is of the greatest aid in determining the earliest manifestation of the disease. Roughened breathing and weak vesicular breathing or a combination of the two may be found. Cog-wheel breathing is an early sign. Râles may be present very early or may be long wanting. They are usually of the fine crackling, crepitating variety, more rarely of the medium size. A localized short whining, only audible after coughing, and only on inspiration. Medium râles in any considerable number usually occur with commencing softening of the apices. The earliest signs occurring in the apices are usually heard in the supra and interscapular fossae. A subclavian murmur can be heard during the inspiration and expiration, and is due to adhesions of the pleura to the sheath of the subclavian artery. Symptoms of laryngeal involvement occur frequently in early cases, and may be manifest in a form of chronic catarrh, while slight swelling of the thyroid gland, dilation of the pupils and albuminuria may be noted.

Differential Diagnosis of Early Cases: Usually suggested by ill looks, loss of weight, tachycardia, blood spitting, etc. This calls for a physical examination, which, if it reveals the slightest deviation from the normal type of breathing at

one apex, if there occurs on inspiration or coughing the slightest crackle or whining, if the percussion note is higher in pitch, less resonant, we can say that there is an infiltration at one apex, and may assume that it is tubercular.

Tuberculin as a Means of Diagnosis: When a patient reacts to tuberculin or during the reaction, a perfectly definite change is made out in the physical signs, the method becomes one of the most satisfactory diagnostic aids we possess. We know that the patient has tuberculosis, where he has it, and sometimes about its extent. Koch's method was to inject 1 mg., 5 mg. and then 10 mg., and if there was no reaction then to repeat the last dose.

CONCLUSIONS.

1. Clinically, the first stage of tuberculosis of the lung may be demonstrated before bacilli appear in the sputum.

2. Predisposition, or where one or several individuals of the same family have fallen victims to consumption, the first signs of ill health ought to prompt the physician to exhaust every means and method of diagnosis in order to arrive at a correct conclusion and steps taken if a positive diagnosis is made to insure the patient prompt and rational treatment.

3. That the latent, closed or masked forms of early lung tuberculosis are not easily demonstrated, and if the clinical findings are not of sufficient proof, diagnostic tuberculin should be administered.

4. Repeated negative examinations of the sputum do not preclude the existence of pulmonary tuberculosis.

CARROLL COUNTY.

The Carroll County Medical Society met Oct. 26, 1909, at Mt. Carroll, in the Carnegie Library. The following officers were elected: Dr. C. W. McPherson, Hazelhurst, president; Dr. J. L. Nathanson, Chadwick, vice-president; Dr. H. S. Metcalf, Mt. Carroll, secretary-treasurer. Dr. G. W. Johnson of Savanna read a biographical sketch of Dr. A. D. Hunter, who died Aug. 18, 1909. Appreciative resolutions on the death of Dr. Hunter were adopted by the society. The following program was given: 1. "Eclampsia," Dr. E. L. Hendricks. 2. "Pellagra," Dr. W. E. Clay. 3. "Condiment," Dr. N. Rinedollar. 4. "Paper," by Dr. J. B. Schreiter. 5. "Fee Bills," Dr. J. W. Powers. 6. "Report of an Interesting Case," Dr. G. W. Johnson. The papers and discussions were stimulating and the meeting was a success.

H. S. METCALF, Secretary.

CHAMPAIGN COUNTY.

TREATMENT OF TYPHOID FEVER.*

DARWIN KIRBY, M.D., CHAMPAIGN, ILL.

This is by far too large a subject to be treated fully in the time allotted, so I will simply try to emphasize a few of the things which lately have been receiving a good deal of attention.

Prophylactic treatment has accomplished more in this disease than in any other, with the exception perhaps of small-pox. Both state and town by their health boards have been educating the people, looking after drainage and water supply, inspecting milk and food, fighting the breeding places of flies, and establishing laboratories. Individual prophylaxis is at present confined mainly to the sick room, and concerning this many of you, no doubt, know better than I. Only one thing cannot be reiterated too often, and that is extreme carefulness on the part of the family, physician, and nurse.

There is one field in which little advance has been made, although not new, that is, prophylactic inoculation. We hear many good reports as in the Boer war, and then again many conflicting ones. Schoemaker, who has perhaps done as

* Read before the Champaign County Medical Society.

much along this line as any one in our country, finds that there are greater bactericidal and bacteriolytic properties in the serum of an inoculated person than in normal serum. However, the report is not very enthusiastic. It may do for large bodies of men who are going into a strange country where the disease is rife, but not in ordinary practice.

There is, however, one important field of prophylaxis which has been sadly overlooked in this country, and that is typhoid carriers. By this I do not refer to flies, birds, etc., but to people who have had the disease and are apparently well. In Germany it has been estimated that at least five per cent. of typhoid patients become carriers, and it is doubtless safe to assume the same here. So if possible the feces and urine of every typhoid patient should be examined before he is discharged. The gall bladder and intestines are most often the seat of the infection. In Sweden something like twenty cases were traced to one person, and that person, strange to say, denied all knowledge of having had the disease. I might add that it took the conscientious doctor over a year to trace the fact.

Do you ask what is to be done? Serum therapy has proven a failure, and we would hardly advise removing the gall bladder, nor is isolation feasible. It seems that the best way is to try and change the flora of the intestinal tract, and here the teachings of Metchnikoff may be of value. Another thing is to warn the patient and have him report to, or be under the supervision of a board of health until free from the disease.

Under the active treatment we will first consider serum therapy. This has proven rather disappointing. Many often ask, "Why does it work as in diphtheria?" The bacteriologists tell us that the typhoid bacillus does not produce a toxin which is dissolved in the surrounding media, but one which is retained within the organism itself, an endotoxin. This is only liberated at the death of the typhoid bacillus, which may account for the conclusion arrived at by Prof. Hoffman, that while there are agglutinins and bacteriolytic and bactericidal properties in the serum, there is not sufficient anti-toxin to overcome the toxin which is set free by the death of the bacteria.

Hygienic treatment is so well understood that it is not necessary to dwell upon it. Absolute physical and psychical rest must be maintained; ambulatory patients put to bed; plenty of fresh air and sunshine, ice bag for headache, etc. There is no danger of fever patients catching cold. Cleansing baths, and above all, keep the eyes open for bed sores; enemas every other morning if the bowels are not moving well, or a little epsom salts may be given.

We all know what good hydrotherapy does, whether it be by baths, sponging, or packs. I have often seen the hot pack have a good influence where the patient did not respond to the cold sponging and ice ironing, but remained restless and with a high temperature. Fifty ounces of water are to be given during the twenty-four hours at stated intervals, whether the patient calls for it or not.

Medicine plays but a very small rôle with most physicians except as symptomatic for such conditions as headache, vomiting, constipation, etc., and we all have our favorite remedies for these conditions. Some men still use intestinal antiseptics, but not to destroy the bacilli, because we know now that the disease is essentially a bacteriemia, but to keep down putrefaction and fermentation and thus prevent tympanites. If proper diet is used we need have little fear on this score. Urotropin has been recommended on very high authority to keep the urine free from bacteria and to prevent their lodgment in the gall bladder. Doses up to sixty and seventy grains per day have been used, but this does not appeal to me as rational. A good many advise calomel in order to clean out the intestinal tract well if the patient is seen during the first week.

Complications are to be treated as they arise. Perforation; the treatment here consists of two things, early diagnosis and a surgeon. Hemorrhage; absolute quiet, and ice bag or coils, morphin. Calcium lactate up to seventy-five grains in twenty-four hours may be given by hypodermoclysis. We must also be ready to defeat tympanites, sudden dilatation of heart and bed sores.

Dietetics seem to me to be the most important of all. Very few works give us any aid concerning the metabolism of typhoid fever. It was my good fortune,

however, to hear Schaffer at the meeting of the American Medical Association at Chicago in 1908. He says that during the course of typhoid fever from ten to sixty pounds are lost. It is due to this fact that Ewing thinks many of the phenomena of severe cases arise; due to the auto-intoxication resulting from the burning of thirty pounds of body tissue in three weeks, and not directly to the toxic substances of the typhoid bacilli. This has been proven by urinary examination, which shows abnormal substances such as are found in the toxemia of pregnancy and in acute yellow atrophy of the liver. This loss also is harmful during convalescence. If the patient is under-nourished, he absorbs enough caloric value from his own body to equal the energy expended. There is also more energy expended than normal, due to the increased heat production. The increase according to Kechl is twenty to thirty per cent. Adding this to the normal, which is thirty-three calories per kilogram, or sixteen calories per pound, we find that it makes twenty-eight hundred calories for a man weighing one hundred and fifty pounds. This is the minimum amount of energy expended by a typhoid patient in twenty-four hours.

There are few typhoid patients who receive enough nourishment, so they use up varying amounts of their own tissues. Besides insufficient feeding there are the pyrexia and action of bacterial toxins which cause protein loss. Schaffer advises larger amounts of carbohydrates than both proteins and fats combined. He reasons that there is less intestinal disturbance and rise of heat, and that it throws less work upon the intestines and kidneys. Some may say that the typhoid digestive apparatus is not strong enough; of course it is not equal to that of a healthy man, but Von Hoesslin, Leyden, and others have shown that there is but little impairment if food is given in the proper form. Schaffer obtains most of his carbohydrates by using sugar of milk. The method which I have used differs from the above in quality, as I give more proteid though I arrive at the same caloric value.

I am indebted to Dr. Joseph Miller of Chicago for most of my instruction along this line while at the Cook County Hospital. During the year and a half there I had the opportunity of seeing many cases treated both ways; that is on the milk diet alone, and also by the feeding method, and it was the general concensus of opinion that there was a shorter duration of both acute illness and convalescence when some such method as I shall outline was followed.

The daily diet consists of:

	Calories.
Cream—one quart	1,540
Eggs—four to six	420
Bacon from which lean has been removed—two ounces	540
Cereal—one and one-half ounces	100
Sugar—five ounces	600
Total amount of calories	3,200

Besides the above, or instead of it, some of the following may be allowed: jellies, custards, prune juice, apple sauce, gelatin, peas, spinach, baked potato mashed well, small amounts of thin slices of toast, cream of tomatoes, asparagus tips, tapioca, corn flakes, or some other dry cereal. The cream when given as a drink may be diluted with water, or what is better, seltzer water.

A routine something like this is followed: Breakfast: corn flakes or similar cereal about an ounce with cream and sugar, milk sugar preferred, soft cooked egg, and a little toast. Ten o'clock a. m.: eggnog made with cream, water, sugar, and a little flavoring; no whisky or brandy unless patient is very weak, or heart action feeble, when half to one ounce may be added. Noon: soft cooked egg, bacon freed from lean, one to two ounces, custard and fruit juice. Two o'clock p. m.: eggnog. Four o'clock p. m.: soft egg, gelatin, apple sauce, cream and sugar. Six o'clock p. m.: eggnog or egg beaten with pinch of salt or soft cooked, small piece of bread and cream. The above may be altered to suit the views of the physician, less proteid may be given and more sugar and milk.

The main thing, it seems to me, is to conserve the strength and bodily fitness of the patient; thus raising his immunity so that he may the better combat the various dangers which always surround a patient suffering with an acute infectious disease. The great fear, of course, is perforation and hemorrhage. The diet which I have recommended will be fluid in consistency when it reaches that part of the alimentary tract where most of our pathology lies. Another thing, the patient is much easier to handle. In a majority of cases there is less apathy, less tympanites, and a fair appetite; as a rule little forcing being necessary to get him to take the food.

And then during the convalescence instead of having a patient hollow-eyed, anemic, weak, with flabby muscles, and trying all expedients possible to obtain more food, as any half-starved person would, you have one fairly contented with his lot, except that he wants to get up too soon, perhaps; but otherwise taking his food at stated intervals and contented withal.

A few may say the digestive apparatus is too weak to stand the strain; that we have gone over before but have perhaps omitted one thing, the appetite juice. You may smile at such a name, yet it plays an important part. It is a well-known physiological fact that the smell or sight, often only the thought of pleasing food, causes a greatly increased flow of gastric juice. You have all experienced such sensations, but suppose you were only to look forward to a cup of milk or beef tea. Would there be much gastric juice to welcome it when it passed the cardiac orifice?

Convalescence as a rule causes us but little worry. I think it best to withhold heavy meats until the temperature has been normal for two weeks; the same length of time should also be applied to letting patient up out of bed.

CHRISTIAN COUNTY.

The Christian County Medical Society met in semi-annual session in the county courtroom, Taylorville, Jan. 20, at 2 p. m., and was called to order by the vice-president, Jesse P. Simpson of Palmer, President J. H. Dickerson being confined to his bed by illness. The principal speaker was Dr. J. L. Wiggins of East St. Louis, who spoke on "Some Difficulties Met in Differentiating Between Surgical and Non-Surgical Cases." The paper was very interesting and highly appreciated by those present.

Dr. D. D. Barr of Taylorville gave a paper on "Eye Defects in School Children vs. Effect on Their Mental Advancement," which was based on 1,680 tests made in the public schools of Pawnee, Morrisonville and Taylorville. The doctor pointed out that in the rooms where the pupils had been advanced through hard examinations he found one in six or seven of the pupils of such a grade; but in the rooms containing those pupils who could not pass the hard examinations he found in one room half of the pupils with bad eyes and in another school as many as three out of four with bad eyes. By bad eyes he meant those whose vision was two-thirds or less. He then asked the question: Does poor scholarship make the bad eyes or do the bad eyes make poor scholarship? Many might think that the Doctor was trying to make out a bad case, but he has the teachers of the various schools to verify his statements and even to add to what he read from his paper.

Drs. Albert Field of Stonington and J. N. Nelms of Taylorville were on the program but unable to attend. Drs. F. W. Bechtold of Pana and Norman Pearson of Taylorville were elected to membership. The following officers were elected for the ensuing year: Dr. Jesse B. Simpson, Palmer, president; Dr. J. H. Miller, Pana, vice-president; Dr. H. M. Wolfe, Taylorville, secretary-treasurer; Dr. G. L. Armstrong, Taylorville, delegate to state convention; alternate, Dr. T. A. Lawler, Taylorville. Censors, Drs. James Simpson, Morrisonville, Carroll and Pearson, Taylorville; member medicolegal committee, Dr. J. N. Nelms, Taylorville; public health and legislation, Dr. J. H. Miller, Pana; committee on resolutions, Drs. Carroll, Barr, G. L. Armstrong and M. M. Hill, Taylorville.

COLES COUNTY.

The Coles County Medical Society met Tuesday, Jan. 11, 1910, at 8 p. m., at the Court House in Charleston. The following officers were elected for the ensuing year: Dr. C. B. Voight, Mattoon, president; Dr. F. E. Bell, Mattoon, vice-president: Dr. J. T. Montgomery, Charleston, censor; Dr. R. H. Craig, Charleston, secretary-treasurer. The following excellent program was carried out: "Surgical Diseases of the Abdomen in Children," Dr. J. T. Montgomery. A discussion followed. "Dermoid Cyst," Dr. R. H. Craig. "President's Address," Dr. Cleaves Bennett. Clinical cases.

R. H. CRAIG, Secretary.

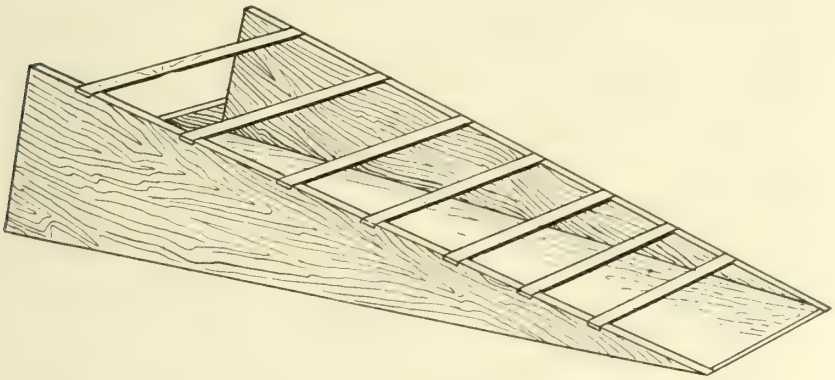
COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Meeting of Oct. 13, 1909.

DISCUSSION ON SYMPOSIUM ON FRACTURES.

Dr. John E. Owens:—I was very much interested in all the papers that have been read. Dr. Ochsner gives a very excellent exposition of the modern treatment of compound fractures. The subject is so large that one hardly knows where to begin to make even a few remarks. I will say, however, in a general way, that the alcohol dressing which I have used for twenty years in the treatment of com-



pound fractures has given me so much satisfaction that I am near saying it is the best of all the dressings now in vogue. I am speaking now of large wounds. If I remember correctly, Nélaton saved Garabaldi's ankkle joint by an alcohol dressing, and he wrote a very excellent paper on that subject. About twenty-five years ago I began using alcohol dressing on tremendously injured hands. Take, for instance, a case like this: A man's hand is crushed, the tendons bare, the bones broken, comminuted, everything compound. Make a wedge-shaped splint or an inclined plane (Fig. 1.)—a box with two sides like the sketch, and lay the hand, previously dressed, on strips of gauze or rubber sheeting covered with gauze placed across the splint from side to side. The hand must be thoroughly covered with fluffy gauze, both palm and back. This is kept constantly wet with 70 per cent. alcohol, 1 part to 4 parts of water. Several wicks of gauze can be so placed as to conduct the superabundant alcohol to a saucer placed on the floor of the inclined plane. A month ago a man sustained a very severe compound fracture of the bony elements composing the elbow joint, so much so that excision was required. He declined to have an amputation. I really would have amputated the arm if the patient had allowed me to do so. The ulnar nerve was exposed for about two inches and a quarter, bridging across the chasm left by the excision. Subsequently most of the soft muscular parts on the radial side sloughed away. The skin sloughed over about two-thirds of the circumference. I did not attempt to

suture, but packed the cavity with alcohol-gauze. I was interested to know what would become of the nerve. It became softer and softer and frayed away till separation occurred and the wounds have healed. How much use the arm will be to him I do not know. He has a paralysis of both sides of the little finger and one side of the ring finger, but at the same time it is a satisfaction to a man if he has only a clump of an arm left or the clump of a hand and can only move two fingers. That is better than an artificial arm. Grafts from time to time closed the skin wound. We did not put any dressing on the Thiersch-grafts. He wore a splint and a nurse watched the patient to prevent damage to the skin-shavings. In my work wounds are commonly treated in this way. If one desires to preserve a specimen, alcohol will accomplish it. This dressing will prevent infection. A week ago a man came in with a compound dislocation of the elbow. The lower end of the humerus had been forced through the soft parts, causing a large wound on the outer aspect of the joint. The joint proper was open from side to side: sutures previously introduced were all removed, and the cavity filled with fluffy gauze, saturated with alcohol of the strength above named.

Dr. S. C. Plummer:—Our forefathers thoroughly considered the effect of the muscles in causing displacements of the fragments, and the little improvement we have made on the excellent work done before our time has been by means of the *x*-ray. Fracture is frequently complicated, that is, it is not a single line of fracture through the bone, but it consists of a number of fragments, has fissures running off in different directions, has many lines of fracture instead of only one; another thing is how frequently fractures occur without much displacement. Those formerly were unrecognized; for instance, fractures of the carpal and tarsal bones, simple and uncomplicated by other injuries, were considered extremely rare. Now we know fractures of the carpal scaphoid are not uncommon, also fractures occurring to some of the isolated bones of the tarsus. The use of the *x*-ray has made practically unnecessary the routine use of an anesthetic for the purpose of diagnosis. Some of the older surgeons considered an anesthetic necessary to diagnosticate a fracture. Still, it is useful for making an accurate diagnosis, especially if the treatment is going to require an anesthetic. Hoffa warns against the use of an anesthetic for diagnostic purposes. Having a patient asleep and free from pain sometimes makes the surgeon too bold in his manipulation. In impacted fractures of the neck of the femur the use of an anesthetic is contraindicated because a surgeon may manipulate too freely and disturb the impaction. I can think of a case where the bone broke as the result of osteomyelitis which had existed for sixty years; afterward the leg broke practically by its own weight, without any violence of any sort. He then had to have it amputated.

In regard to the treatment of simple fractures by deliberately making them compound, it appears to me it is important to decide as to how long after the injury the operative interference should take place. Especially fractures of the patella in which the open method is often used. Some say operate at once, others say wait. It seems to me proper to wait a while. Tissues immediately after the accident have a lowered vitality, the blood supply is interfered with and the extravasated blood also forms a good pabulum for the propagation of infective germs; consequently to await an interval of perhaps a week is good; and during this interval the use of massage is advisable. This improves the circulation and hastens absorption of the extravasation and puts the tissues in better condition to resist possible infection and to repair more quickly.

Dr. Aimé Paul Heineck:—One of the most valuable subjective symptoms of fracture is pain. Pain is constantly present in all fractures that are not spontaneous or pathologic in nature. This pain is always most marked at the seat of fracture, and is always intensified by pressure and by mobilization of the fragments of the fractured bone. A sudden solution of continuity of bone or cartilage unassociated with pain is highly suggestive of a pathologic fracture. The *x*-ray is a valuable diagnostic aid to resort to.

All compound fractures are not equally significant. A fracture, compound from within, does not have the significance of a compound fracture due to direct

violence. In the latter not only have the soft tissues overlying the seat of fracture been much contused, much lacerated, but the probability of infection is great. Infection determines the course of the case. Take care not to transform a simple into a compound fracture. Tetanus is an unfortunate complication in compound fractures, and to prevent its occurrence make a prophylactic injection of antitetanic serum. This agent is non-toxic, and though a few cases of tetanus have occurred after its prophylactic employment, our confidence in it is unshaken.

Among the fractures of the patella that have been shown this evening, some were treated operatively, some were treatd non-operatively. Clinical observation and a study of the literature of the subject have convinced us that operation is indicated in some cases and contraindicated in others.

The open operative treatment is indicated: 1. In all fresh fractures of the patella in the absence of contraindications. 2. In all compound fractures. 3. In all comminuted fractures. 4. In all cases associated with considerable intra-articular effusion. 5. In all cases associated with marked laceration of the peri-articular tissues (ailerons, reserve extensor apparatus). 6. In all cases in which the interfragmentary space or diastasis has at any time exceeded 3 cm. 7. In such fractures as are very liable to cause serious functional joint impairment. 8. In all fractures of the patella occurring in individuals upon whom at one time or other a leg or thigh amputation has been performed. 9. In all fractures of the patella occurring in individuals having some permanent functional impairment of the opposite knee. 10. In all individuals who, having sustained a partial amputation of the leg, can, for flexion and extension of an artificial limb, derive benefit from the preservation of the integrity of the extensor apparatus of the leg. 11. In all bilateral fractures of the patella. 12. In all refractures in the absence of contraindications. 13. In old fractures of the patella, associated with marked impairment of function, dependent on non-union, long fibrous-union, union of patellar fragment to femoral condyles, or union of fragments in faulty position mechanically interfering with function.

We do not advise the open operation: 1. In fractures of the patella that occur in a diabetic patient. 2. In fractures of the patella occurring in patients having advanced tubercular disease. 3. In fractures of the patella occurring in patients suffering from well developed cardiac, renal, or hepatic disease, or from malignant disease. 4. In closed longitudinal fractures, with no displacement, or with but slight lateral displacement. 5. In subaponeurotic or in incomplete fractures. 6. In which the separation of the patellar fragments is so slight as to be barely detectable. 7. On patients who prefer to pass their lives partly disabled.

Regular Meeting, Nov. 3, 1909.

A regular meeting of the Chicago Medical Society was held on Wednesday, Nov. 3, 1909, at 8:30 p. m., in the Assembly Hall of the Northwestern University Building. The president of the society, Dr. John A. Robison, occupied the chair. Dr. William A. Evans, Chicago, addressed the society on "The Early Diagnosis of Tuberculosis." Dr. Karl von Ruck, Asheville, N. C., presented a paper entitled "On the Specific Treatment of Pulmonary Tuberculosis." Dr. Sherman G. Bonney, Denver, Colo., read a paper entitled "Recent Observations with Reference to Certain Clinical Aspects of the Tuberculosis Movement."

THE EARLY DIAGNOSIS OF TUBERCULOSIS.*

W. A. Evans, M.D., Chicago.

Mr. President:—I want to direct the attention of the local profession to the great necessity for earlier diagnosis of tuberculosis than prevails at the present time. My treatment of the subject will not be along the lines of the technical side, the means of early diagnosis, but will refer to the advantage of early diagnosis, in fact, the necessity of it.

* An address in a symposium on tuberculosis before the Chicago Medical Society, Nov. 3, 1909.

I have here some figures that have been prepared by Drs. Drake and Helm of the Department of Health, which bear on the tuberculosis rate in the city of Chicago, and the reporting of tuberculosis during the life-time of the patient. Some of the figures bear on the question of the promptness with which the cases were reported, and, of course, very remotely on the stage of the disease at which the diagnosis is made. I find in the two-year period between November, 1905, and November, 1907, there were 940 living cases of tuberculosis reported to the Department of Health, and in the period from 1907 to 1909 there were 6,196 cases reported either during the life-time of the patient or shortly after the patient's death had occurred, as I shall presently explain. In the first two-year period there were 7,963 deaths, and in the second two-year period there were 7,695 deaths. It is estimated that Chicago increases in population at the rate of between 60,000 and 65,000 per year, and this would mean that at the end of the four years there were 260,000 more people in the community than there were at the beginning of the four-year period. In 1906, 277 cases were reported and 3,837 deaths. These first figures are from November 1 to November 1, but the figures I am now reading are for the calendar years, with the exception of the last item in 1907 of 919 cases reported and 4,030 deaths. Practically all of the 919 were reported during the last five months of the year. In 1908 2,577 cases were reported and 3,934 deaths; in 1909, 3,362 cases have been reported during the first ten months of the year, and there have been 3,245 deaths. In other words, the number of cases of tuberculosis reported during this year, while the patient was living or soon after death, is in excess of the number of deaths.

We have made three groups of the reports, first, as to whether the patients were reported by physicians as part of their work in connection with private practice; second, whether they were reported by hospitals, and, third, whether reported by the Tuberculosis Institute. I find that during six months of this year, beginning with April, there have been 1,754 cases analyzed with this point in mind. Of that 1,754 the physicians have reported 911, or something more than half; the hospitals have reported 442, and the Tuberculosis Institute has reported 399. The physicians, in their private practice, are caring for something more than 50 per cent. of the tuberculosis. This summary fairly expresses the conditions as they are. Certainly a considerable part of the consumption in the community is being cared for outside of the private practice of physicians, and a very considerable part at some time of each individual case is being cared for by institutions, and outside of the private practice of physicians. We find that these changes occur at both ends of the line; that there are cases that are diagnosed by the Tuberculosis Institute and later are cared for by family physicians, and then again there is a very considerable collection of cases of consumption that are primarily diagnosed by the family physician and that die in one of the hospitals for consumptives. We find illustrations of the movement in each of these directions.

Now here is the analysis of 1,947 deaths occurring during the spring and summer and fall of this year. Of these, 751 were reported as living cases of tuberculosis; 1,196 were not so reported. The percentage reported as living was 38.7. We are greatly interested in the question as to what period of the disease was the report made to the Department of Health. We find of this number 63 were not reported to the Department of Health until after the patient died; of this 63, 37 were reported by physicians and 26 by hospitals. That occurs in this way: A doctor goes to see a patient, and sends in a report by mail to the Department of Health, and before the report reaches us the patient dies. The undertaker comes along for the death certificate, and as soon as he gets it he goes straight to the Department with it. Cases reported one week before death were 134; one to two weeks before death, 67; two to four weeks before death, 94; two to four months, 142; four to six months, 147. We find these proportions change as we go down the list. The cases of tuberculosis that are not reported until within four to six months of the death of the patient, one would say, do not constitute a fair criterion of the state of the diagnosis in this community, and one might say that there is no particular gain from having those cases reported at all. There is a

very considerable advantage in having such reports, since it is the deaths of the last six months that is the maximum menace to the community, and therefore it is exceedingly vital that the Health Department should have some knowledge of the cases during that time.

I presume that it is a matter of common information that tuberculosis is not being diagnosed as early as it should be, and it seems to me that right here in early diagnosis lies the crux of the entire consumption situation, whether we view it from the standpoint of the community, and the protection of the community, or from the standpoint of the family physician, or from the standpoint of the hope of cure of the case. I know of no more unsatisfactory medical procedure than caring for hopeless consumption. It is unsatisfactory, because, as a general thing, the patient has gone on until within three or four months of his death. He has exhausted all his means, and that of the contributing members of his family or social organization with which he is connected. He does not make for the reputation of the doctor, and on top of that I know of nothing more trying for the physician than that he is sitting idly by, unable to render any material service for his patient. Therefore, the doctor is interested in making the diagnosis when he can say to the patient: "I am able to cure you here, within the limit of time and within the limit of expense that is within your reach." It doesn't matter very much if a persimmon is twenty feet up in the air, and we have a pole or not, if the pole is only ten feet long. There is seldom a diagnosis made by the ordinary physical procedure that reveals a case of tuberculosis that is curable in less than two years, even accepting as cured those cases of arrested disease, and far more frequently when the diagnosis is made the disease is incurable. To say to the patient, "You can be cured in three years," when that patient cannot possibly sustain himself for longer than one year, is, of course, virtually to say to the patient, "You must exhaust all your resources, and then you must inevitably die."

The doctor is greatly interested in early diagnosis, and the community just as much. There is a period in the history of every case of tuberculosis when it can be cured in three or six months, and there is another period when it cannot be cured at all, or in less than two or three years. There is scarcely a family in the community but that in some way can carry a dependent member for three or six months, but there is scarcely a family in the community that is able to carry a member of that family for three years, and give to that dependent member all of the things that are needed. Therefore, the crux of the situation, from an economic standpoint, is a diagnosis at a time when a cure can be effected by means that are within the reach of the patient, his family or those that are closely bound up with him.

I do not believe that the degree of technical skill required to diagnose these cases of tuberculosis will be reached by the man who comes in contact with it first, for many years to come, and during that interval we shall have people die at the rate of 4,000 a year in this community because of the neglect of diagnosis, a diagnosis which requires so little of technical skill as that which can be applied by people who are not working constantly and all the time in this one special field of medicine, and that method of diagnosis is by the use of tuberculin. I have about exhausted my time, but I believe it is generally accepted now that it is accurate to a degree far surpassing the average degree of accuracy of diagnostic procedures. I believe that even those who contend that there is some danger in its use are willing to admit that that danger has been grossly exaggerated, and that harmful results are few as compared with the hundreds and thousands of people who are dying only by reason of the fact that diagnosis has not been made early enough.

There is a great wave in this country in favor of a qualitative determination of relative values rather than a vague chasing after possibilities, which has constituted the practice of medicine in times past. Let us consider the possibility on the one hand of harmful results, and on the other hand the hundreds of thousands that are annually dying for need of accurate procedure in diagnosis requiring a relatively small amount of skill. The figures I gave are not peculiar to Chicago.

I believe that I am of the same opinion as Dr. Saxe, that so far as the diagnosis of tuberculosis is concerned, that the family physician is furnishing a diagnosis that is quite satisfactory, compared with the average standard of diagnosis. The diagnosis they make is about as accurate as that which comes from men connected with the hospitals and the Tuberculosis Institute itself, but there is a crying need for the use of this accurate diagnostic procedure, which at the same time is relatively safe.

DISCUSSION OF SYMPOSIUM ON TUBERCULOSIS.

Dr. Charles Louis Mix:—Mr. President: I hardly see how it is possible for any one to do justice to the excellent papers that have been read by all three of the gentlemen, in five minutes. There are a number of things which struck me in each of the papers read, but I shall speak of only one or two. I was particularly pleased to hear Dr. Bonney advise us to pay more attention to physical examination, and not so much attention to the laboratory examination. I believe that it is possible, in the majority of cases, with careful physical examination alone, to determine the presence of tuberculosis. The ordinary tuberculin reaction is valuable at times, but only at times, and I do not believe it is at all necessary to use it in every case. Dr. Bonney spoke of some signs which are to be found in the apices of the lungs, speaking of the very slight, almost imperceptible click which one finds at the end of the inspiratory effort. This is absolutely disregarded by a large number of medical men, who do not pay sufficient attention to very little things. There is another sound of a good deal of value, and that is the prolongation of the expiratory murmur, which helps one immensely in the diagnosis. Of course, this is not found in early cases, and if you see your case sufficiently early you may not have this sign, but many people do not come to us until they have had tuberculosis sufficiently long for it to show.

I am also very much interested in the work reported by the von Rucks. I have always been of the opinion that there is some prognostic value in the Widal reaction in typhoid fever, notwithstanding the fact that many bacteriologists tell us that this reaction coming early has no prognostic value. It is very interesting, therefore, to learn that agglutinin, with very small dilutions, has very marked prognostic value. I think, too, that it was very fitting for Dr. Evans and Dr. Bonney to insist on the importance of early diagnosis. There is no use to try to treat these cases when they are half dead, and many of them are half dead when they come to us. If those who are teaching in medical schools will carefully instruct the students to make an early diagnosis, and if the people will come to us early, it will not be very long before we will have a death rate showing a very much greater decrease than it shows at the present time.

Dr. Frederick Tice:—Mr. President and Members: To-night we are particularly favored and fortunate in having with us as our honored guests, recognized authorities, ones preeminently qualified and with an international reputation. We are to congratulate ourselves on our good fortune. It is with considerable timidity that I will attempt a discussion for fear of detracting rather than adding to what has already been said. A few points, however, may be emphasized.

Concerning the great importance of an early diagnosis in tuberculosis all are agreed. In our endeavors to make such a diagnosis, while the condition is yet a closed tuberculosis, repeated examination of the sputum and more recently the detection of the bacilli in the circulating blood as suggested by Rosenberger, are of but little or no value. Too often symptoms and signs are only suggestive or suspicious. Practically all admit the value of the diagnostic use of tuberculin, but there exists a wide difference of opinion as to the method of its employment. We know that harm results from over dosing when employed therapeutically, even in small doses, and it is reasonable to conclude that harm may result in the subcutaneous diagnostic dosage. As the same knowledge may be obtained by the local employment, when one of the skin tests is used, without the least harm, it would appear that a local is to be preferred to the subcutaneous.

The contents of this most admirable and valuable paper of Dr. von Ruck, for most of us, will require subsequent study. For some time past a study of the

work by the Drs. von Ruck has impressed me. Although opposed and at times severely criticised, they have continued and if results are a criterion their labors have been rewarded with success. Much credit is due them. Two points may be emphasized: First, the unquestionable advantage of the use of tuberculin therapeutically, especially the watery extract. Second, the estimation of the agglutinating power of the blood and the blood-alkalinity as a measure of the degree of resistance. The methods and results are particularly encouraging at this time, for with the opsonic index discarded, the usual empirical method of depending on the clinical symptoms must lead to disaster.

Dr. Bonney's excellent paper comes at an opportune time. I would emphasize; first, the quite general but unwise custom of advising patients, as soon as the diagnosis is made, of seeking a Western climate. The majority, particularly the indigent, are far better off at home. Second, I direct the attention of the society to the recent action of the State Board of Examiners of Oklahoma, in refusing to license tuberculous physicians. The public and the profession owe much to many of these poor unfortunates, and this society, as others have done, might do well to enter a protest.

I would personally express, and I believe I voice the sentiment of the entire society, my sincere appreciation of the papers of the evening.

Dr. Clarence W. Leigh:—Mr. Chairman: After listening to the two very interesting and scientific papers I also feel that there is nothing that I can add that would be of interest. I believe it is admitted by every one that the early diagnosis of pulmonary tuberculosis is exceedingly important. One of the principal reasons why we do not make a diagnosis in the early stages is that in many cases we do not see the patients in these stages. I think we see them oftener in the moderately advanced, or even in the advanced stages. The average layman is as pessimistic as ever regarding the curability of the disease, and very often when a diagnosis of incipient pulmonary tuberculosis is made he is exceedingly loth to accept it. The failure to make an early diagnosis in these cases, therefore, I should say is not so remarkable. If it is true that the majority of persons are infected in infancy or childhood, it would seem that in the future our investigations should be along the line of the pathology of the incipient stages of the disease in infancy, and in childhood. It is barely possible that we may be compelled to revise or alter our views in reference to heredity, as it applies to tubercular diseases.

Dr. von Ruck has shown the importance of the immune bodies, and also that the sera of babies exhibits the presence of these immune bodies, and that they are transmitted through the placental circulation, and, what is still more remarkable, that these bodies have been transmitted from the tubercular father to the child, when the mother was apparently free from tuberculosis. I think it was His who demonstrated that there are granular forms of the tubercular bacilli which do not stain with ordinary methods, and which are capable of producing the disease and also that under such conditions lymph glands, in which the presence of the bacilli can not be demonstrated, produce the disease, when injected into guinea-pigs. That hereditary tuberculosis has been proven, is admitted, and it is possible that there are many more cases of this type than we have been led to believe in the past Taking all these factors in consideration it is possible that we are not entirely warranted in concluding that there are so few cases of the hereditary form of the disease and that the conditions we term predisposition tubercular temperaments, etc., are modified forms of the disease.

Dr. Wm. J. Butler:—In regard to the use of tuberculin in suspected tuberculosis for diagnostic purposes, I believe that the recent literature on this subject has not served to enlighten us fully on the exact value and limitations of tuberculin when used diagnostically. There is an impression commonly expressed that a positive reaction to tuberculin in whatever manner employed means that the individual has tuberculosis at the time the test is made. This is absolutely erroneous. A positive skin reaction for tuberculin in infancy means that in all probability the infant has active tuberculosis. In later childhood and adult life it means that the individual has reacted at some time during life or is reacting against tuberculosis, but carries no weight for the decisive differential diagnosis of tuber-

culosis in the individual at that time. The same may be said of the other surface reactions that have been advanced. Wolf-Eisner, recognizing this point, claimed for the conjunctival reaction special value for the diagnosis of active tuberculosis. He is apparently alone in the substantiation of this.

The same may be said of the stick reaction. The general reaction obtained by the subcutaneous use of tuberculin becomes decisive for the diagnosis of tuberculosis, especially when we have evidence of increased activity of the process in the focus of infection.

There is hardly a disease to be mentioned in which a study of the antibodies has been more unsatisfactory than in tuberculosis. A parallelism between the agglutinin contents of the blood and improvement in tuberculous patients has been denied by Jürgens. Bordet first called attention to the complement binding antibody in the blood of animals inoculated with tubercle bacilli. Wassermann and Brucke studied this question in man and believed the complement binding antibody to be found in the blood after tuberculin inoculations only.

I have studied the complement binding antibody of tuberculous cases and find it both in cases that have and those that have not been treated with tuberculin. I have not been able to note any parellelism at all between the complement binding antibody and the opsonic content of the blood for tubercle bacilli.

Dr. J. W. Pettit, Ottawa:—I want to take this occasion to pay a personal tribute to the work of the von Rucks. The reports that have been sent out by the von Rucks up to even the last year or two have been so much better than others, especially with tuberculin, that they were questioned and criticized in this community. I made a trip to Asheville purposely to investigate their work. Of course, I cannot certify as to the statistics, and so forth, but I can as to their earnestness, and their effort to contribute to scientific knowledge, especially along this line. They have been persistent and constant users of tuberculin when it was still in dispute, and I want to say that they have contributed more out of their own personal means for the advancement of science along this line than any men I have ever met.

Dr. W. T. Brown, Ripon, Wis.:—Mr. Chairman: There is one point I would like to bring up with reference to what Dr. Evans had to say about the persimmon being twenty feet high, and the pole ten feet long. We cannot lengthen the pole but we can, by a concerted effort, draw the persimmon down. We all understand the necessity of early diagnosis. There is another feature to be considered. You have made your early diagnosis, but you have a patient that can afford only seven to ten dollars a week. What are you going to do? There is no sanatorium that can accept him at such a price. When you stop to think, the West is filled with Eastern people, who are practically cured, and who never saw the inside of a sanatorium, and it seems to me there is a field where a great deal can be done, where the indigent tuberculous patient can be treated at a nominal expense.

We need practical sanatoria conducted on common sense principles, where the patients will be required to do a part of the work, thereby lessening the expense.

Dr. von Ruck (closing the discussion on his part) said:—The point made in regard to the prognostic significance of the degree of agglutinating power was not intended to apply to that observed on admission of patients, prior to specific treatment, and although some authors have drawn favorable prognostic inferences, even then, the low degree present at such a time is insufficient to assure the presence of a considerable degree of self-immunization. It is also well known that in the early beginning of the disease the agglutination power may not have developed at all or be observed in but a slight degree, while in the advanced and cachectic stages the agglutinins often diminish or disappear. On the other hand, a high degree of agglutinating power is indicative of a correspondingly high degree of specific resistance, and in this sense I consider it of favorable import.

In regard to the relation of the opsonic index to the amboceptor, our purpose was to call attention to the correspondence in their increase and decrease, the curves running parallel in all cases which we have studied. This is, however, not saying that the specific substance on which the serum function depends, is

therefore the same; although the observations on our part suggest this. The phagocyting power of leucocytes for tubercle bacilli is not specific and is observable under the influence of normal serum. It is increased under immunization in the course of which specific amboceptor appears and increases, and both effects may be produced by the same cause, or may depend on independent substances formed under the specific stimulation.

The question of early diagnosis has not been considered in the paper presented for your consideration. I may, however, say that the recent method of applying the tuberculin test I consider of decided advantage. With the old subcutaneous method severe reactions which are not only alarming and discouraging to the patients, but have at times been attended with serious harm, have been noted by competent and experienced observers and on that account the subcutaneous tuberculin test has been justly limited in its application.

On the other hand, the cutaneous test is in its very nature perfectly safe, and the conjunctival test appears to be so, if we use the precaution of limiting its application to the normal conjunctiva and avoid the instillation of solutions stronger than the 1 per cent. and of excessive amounts.

In cases studied in the Winyah Sanitarium we have been able to confirm several observations made by others that under the conjunctival application of tuberculin systemic effects with or without focal reactions in the tuberculous lung may occur. We have seen slighter temperature rises and with more or less general malaise in a few cases only; much more frequently and without exception in all of twenty consecutive selected cases (which were favorable for such observations) we have been able to demonstrate focal reactions by treatment, and in some instances hourly examinations of the chest. These reactions were, however, slight and transient and would have easily escaped our notice had not our attention been directed to them by several similar observations reported by other observers. By too liberal instillation of the tuberculin solution, enough absorption can occur to cause even general reactions, and while the focal reactions which we have observed have passed off quickly and in so short a time as an hour, it is probable that they can both be avoided by reducing the quantity of the solution instilled, for which a specially devised dropper or measure may be of advantage.

The conjunctival method of application will undoubtedly be further perfected in the sense of accuracy of the amount instilled; but with the exclusion of scrofulous eye affections, and the limitation of the test to normal conjunctivæ it would seem that even now the general practitioner will meet no material difficulty while the test will afford a most important addition to his diagnostic resources, for cases of early tuberculosis in which there is as yet no expectoration, or the latter does not as yet contain the specific bacillus.

Concerning our clinical results, I may state that many other observers have attained similar percentages of improvements and apparent recoveries and permanencies to those we have reported, and they are unanimous in attesting to the absolute safety and absence of disagreeable effects of the preparation which we have employed. With its demonstrated efficiency we have naturally preferred it to others, which are not free from the objections of causing severe and at times dangerous reactions, with subsequent local and may be uncontrollable inflammations following.

We believe that we have demonstrated by our own and by the results of numerous independent observers not only the value of specific treatment in properly selected cases, but also that with a safe and efficient preparation the general practitioner can deal successfully with the disease to a degree far exceeding that which the most ideal climatic and hygienic methods have heretofore accomplished even in the hands of specialists. By the additional advantages of an early specific diagnosis with the aid of the conjunctival and cutaneous tests, specific treatment can be resorted to at an early period, when the patient is in the most favorable condition for his recovery, and its benefits can be shared by that large class who cannot afford the sacrifices incident to climatic, sanatorium and other methods of treatment which, valuable and important as they are, espe-

cially when the disease is well established and more or less advanced, are not within reach but of a small minority.

Dr. Bonney, Denver, Colo. (closing the discussion), said:—While there are a number of things I would like to say, I will make my remarks very brief. During the last year or two I have noticed a tendency on the part of some experts to exaggerate the importance of signs that are more or less inconstant and rather difficult of recognition. I have also noted a disposition in some quarters to disparage the diagnostic ability of those who depended on auscultation for the recognition of early phthisis. Inasmuch as more than one-quarter of the new patients whom I have seen this year have come to Colorado to make a fight against an imaginary foe, many with erroneous or exaggerated ideas as to the degree of infection, some of them without financial means, or acquaintance, I thought it fitting to call attention to the importance of not overlooking the old-fashioned methods of diagnosis. I believe in the importance of auscultation in the detection of early phthisis. For this reason I have thought it wise to say what I did with reference to these slight modifications of the respiratory sounds. Residing in a health resort, and seeing this year 313 new patients, many of them bringing charts in various colored inks, depicting a multiplicity of detail with reference to physical signs which I could not find, and yet frequently overlooking semi-dry râles, I believe it important to emphasize these matters. I do not think we ought to adopt any specific treatment as a routine measure applicable to all cases. I find that specific treatment is a two-edged sword that is capable of doing a vast amount of good in properly selected cases, and capable of doing an infinite amount of harm in other cases, and I do not feel that we know enough about it as yet to differentiate accurately. I have been a very bitter opponent of tuberculin therapy until three years ago, and then felt that the evidence was sufficient to justify its trial. In beginning this treatment I decided to select a class of patients to whom it might be particularly applicable. Therefore I selected patients who had been in Colorado from one to ten years, and who were more or less at a standstill, in order to eliminate any confusion resulting from the possible influence of climatic change. For non-febrile patients whose condition was more or less stationery I satisfied myself that tuberculin was frequently a most valuable agent. I then tried it in other cases, those in advanced stages, febrile cases, incipient cases and those with mixed infection, and published my results. While the evidence is sufficient to convince me that under proper precautions it represents one of the very important aids to treatment, I have seen enough to satisfy me that it is not a proper agent to be put into the hands of general practitioners for routine administration.

I want to say one word about the tuberculin tests. Inasmuch as it is generally accepted that the ophthalmic test gives response in cases of recent infection, and the cutaneous test in old long standing cases, it is easy to see how little importance we can attach to the cutaneous method in adults. The primary consideration is not to determine whether a man had tuberculosis years ago, but rather if the loss of weight, the cough of two or three weeks' duration and general malaise are dependent on a recent influenza or due to incipient phthisis. If the cutaneous test is not of practical value in these cases, then we should have recourse to the ophthalmic method amidst doubtful conditions.

There seems to be at present a movement in repudiation of the utility of the ophthalmic test, and I think it is pretty conclusively established that unfortunate results have followed its indiscriminate employment, but in obscure cases, when I have wished to determine as to the existence of active tuberculous involvement I have made use of this method and I have never thus far seen the slightest injury result. I don't think we should go to the extreme of condemning the eye test entirely, for in the hands of competent physicians it is still worthy of a trial. I thank you for the opportunity of being present to-night. [Applause.]

Regular Meeting, Nov. 10, 1909.

A regular meeting of the Chicago Medical Society was held Wednesday, November 10, 1909, at 8:30 p. m., with the president, John A. Robison, in the chair. The subject of the meeting was a symposium on "Pure Foods." The following papers

were read: "The New Pure Food Catsup; or When Is a Chemical Not a Chemical?" by John A. Wesener. "The Preservation of Meats by Cold Storage," by Prof. H. S. Grindley, University of Illinois. "Foods from Corn," by Thomas B. Wagner, Chicago, "The Enactment of Food Laws; Their Enforcement and Effect," Thomas Lannen, Esq., Chicago. "Bleached Flour," George L. Teller. Demonstration: "Various Tests of Milk, Human and Bovine," Adolph Gehrmann. The symposium was discussed by Prof. C. S. N. Hallberg, Prof. J. H. Long, Dr. W. S. Baer, and the discussion was closed by Dr. Wesener and Mr. Lannen.

DISCUSSION OF THE SYMPOSIUM ON PURE FOODS.

Prof. C. S. N. Hallberg:—I was certainly glad to hear this criticism of our methods of legislation in this country, but the honorable member of the bar seems to forget that most of the states had food laws before the Federal Act and we would probably be in a worse position without the Federal Act than we are now. The Purpose of the Federal Act is to set a standard that the states can have something to go by. However, I rise more particularly to speak with reference to the subject of food catsup, as it is called. Dr. Wesener starts out from an entirely wrong premise. We must distinguish between food and condiments. What would apply to a food would not apply to a condiment. Food is taken in a large quantity while a condiment is not. Catsup, as its name indicates, is to "catch up," to give an appetite, to affect the gustatory nerves, and psychologic effect, etc., is what is desired when you use catsup. I do not think it is the intention of any one to spread catsup on bread and eat it in that way. Probably catsup would not be palatable if it had very much of the spices and vinegars in it when it is eaten that way. I hold that catsup is a condiment and should be used in moderate quantities, and for that reason it should be aromatic. It should be spicy. But the principal fault I find with the presentation of Dr. Wesener is in placing in the same category benzoic acid with the natural products and derivatives of spices. He speaks of benzoic acid being found naturally extensively in food substances. That is true, but it is not the benzoic acid made from urine or latterly made from toluene. The benzoic acid and benzoate, of which we use at least 99 per cent., comes from an agent made from toluene. It is a coal-tar product. We have got enough coal-tar products masquerading under different names, as, for instance, acetanilid, etc., without taking them daily with our food. I am opposed to the gas-house industry in our foods, for we have enough of it in medicine.

The statement made by Dr. Wesener with reference to the dosage is wrong. The average medicinal doses of these substances are given in the pharmacopeia, and if it is a question of dosage, let me call your attention, for example, to creosote. Creosote is composed of substances known as phenols, creosol and guaiacol, but the phenol of creosote is entirely different from the phenol of the gas-house. Creosote can be taken in doses of from 1 c.c. to 5 c.c. Ten or 15 grains or one cubic centimeter of phenol, carbolic acid, the coal-tar phenol would almost kill. There is no similarity except in a general way between the artificial products and the natural products. The spices, the derivatives and the active principles of cloves, cinnamon and similar agents can be taken in large doses, while the same amounts taken of artificial substances as represented by benzoic acid, salicylic acid, etc., are entirely out of the question and are really poisonous. I am surprised that Dr. Wesener should endeavor to show that acetic acid was poisonous. He is not familiar with it or he would not say that acetic acid, used even in large quantities, is poisonous, and that it is still labeled with the skull and crossbones. It is preposterous to say that vinegar, when taken in moderate quantities, is poisonous.

This is not an age of grandmothers. This is an age of pasteurization. The modern methods of pasteurization are known to the housewife, to Madam Qui Vive, Marion Harland, and other teachers of the public. By these methods catsup can be made without any additional preservatives and kept reasonably just as well as it can be made by loading it with any of these preservatives. A condiment naturally is in a different class with the foods. That is one of the points

we must remember. If Professor Wesener prefers a catsup which is practically canned or stewed tomatoes which simply has a little flavor in it, it is necessary that we add some artificial preservative to it, but for catsup and all these other condiments the proper and natural preservatives are the spices. I would emphasize the importance of making a distinction between artificial preservatives and natural ones, and in so doing we must not overlook the fact that about a year ago there was a case before the coroner's jury which went to the grand jury of an infant who had been given two drops of carbolic acid by mistake. Creosote had been prescribed and the infant died after the second dose. It was not established that the infant died because it was given creosote, but the presumption was to that effect after it had been given carbolic acid.

As I said at the beginning of my remarks, we have had enough of these gas-house products from every point of view. Recently a woman died from the effects of a shampoo agent made from one of these gas-house products.

Not long ago a man died because his abraded finger came in contact with a shoe polish which was loaded with a gas-house product. We feel that it is high time to stop German importations. Even the Germans themselves, if I understand the situation correctly, recently went back on their agreement that they were going to let down the bars on American foods, but as soon as they heard this decision which was supported by the Remsen Committee they decided that they would again put up the bars against the importation of American foods. The Germans make these products and they probably understand more about them than we do.

Dr. John A. Wesener:—You are a member of the Committee on Revision of the Pharmacopeia, are you not?

Professor Hallberg:—Yes, sir.

Dr. Wesener:—Your Pharmacopeia states that methyl salicylate, oil of betula, and oil of wintergreen are one and the same substance.

Professor Hallberg:—I think the Pharmacopeia states that for flavoring purposes, oil of gaultheria, oil of betula, and methyl salicylate are identical products, when the quantity used is small and artificially made use of, but not for medicinal purposes.

Dr. Wesener:—It is stated that they are used for identical purposes, and I believe the chemical formula is the same. In like manner the Pharmacopeia recognizes that salicylic acid and also vanillin made artificially from coal-tar products are identical with the same substances as they occur naturally in plants.

Now, I dislike to disagree with my oratorical friend from the North Side, and I have listened with a great deal of attention to his reply, and I have heard so many similar discussions along this line of the spread-eagle type, with no science or any investigation back of them, that I have paid very little attention to them. The question of gas-house products has nothing to do with the subject we are discussing to-night, only in so far that if we can make products absolutely pure, even purer from the gas-house products than from other sources, why should we not, in the present age of advancement, take advantage of it? What are we here for? Are we going back to what our mothers and grandmothers used to do? Not at all. Conditions are changing every day. We have got to advance. It is the economic conditions that compel us to advance. If we eat beef steak or eggs there is bound to be more or less fermentation set up in the bowels. With fermentation in the bowels we get putrefaction, and from this we get phenol, propionic acid. This is a gas-house product, but it is not made by gas-house, and that is changed by the tissues to benzoic acid which then combines with glycocoll to form hippuric acid. If in addition to that beefsteak you also partake of fruits you will increase the hippuric acid to three or four times what you would get from a strictly nitrogenous diet, and the amount found in that case would be 4 grams, which would be equal to 2.8 grams of benzoic acid. If the professor were more familiar with the habits of our American-born people he would hardly take exception to the statement that catsup is used on bread, nor that it is commonly recognized as an article of food.

There was one statement made by Professor Hallberg in connection with gas-house products which I feel I must answer, namely, that the United States government allows the use of coal-tar products or colors made by the gas-house, providing the dye corresponds to the analysis as given in Green's edition of Schultz and Julius German Book. We have made a great many of these tests, but have never been satisfied with the requirements laid down by the United States government. From our tests we can furnish proof that certain colors which we have examined corresponded to the analysis or requirements as given in Green's edition of Schultz and Julius. We never take any chances. We feed it to the dog or guinea-pig in large doses, and if it does not kill the dog or the guinea-pig we feel safe in recommending that color. But we have fed to guinea-pigs samples of the seven colors allowed, which contain no mineral poisons, and which conform to the analysis as given in the book referred to, and which was satisfactory to the requirements laid down by the United States government. The color was, however, poisonous, in that it killed guinea-pigs, because there was something in the molecule of that dye which made it poisonous to them.

The United States government is not protecting us on that. If you are going to draw the line closely, do so, but let us not split hairs over the harmless benzoate and let down the bars on other things.

Professor Hallberg:—I am familiar with the state laws. The point I made was that the states had no general standard, and that helped to enact the Federal Act. In this connection I believe we will never get any uniformity in our state laws until we get a national department of health, and if this society locally has never endorsed that project I would suggest that it be done at the earliest opportunity. We are committed to a national department of health and we ought to get it.

Thomas E. Lannen, Esq.:—In reply to the remarks of Professor Hallberg, who stated that the national food law was passed as a standard for the states, I will say: I never heard that argument before anywhere in this country. The national food law is a regulation of interstate commerce, pure and simple, and nothing else. If anything survives, it must be the state law. It is a very serious question as to whether the national food law will be sustained or not, because it encroaches on the power of the states. It is regulating food that is reaching the consumer, and the state has regulated that identical food. If any law is a standard, it is the state law and not the national law. If any law must give away, it must be the national law, and not the state law.

Regular Meeting, Nov. 17, 1909.

Regular meeting of the Chicago Medical Society was held Wednesday, Nov. 17, 1909, with the president, John A. Robison, in the chair. The subject for the meeting was a symposium on "Exophthalmic Goiter." The following papers were read: "Medical Aspect," by M. M. Portis. "Pathologic Aspect," by Dean D. Lewis. "Surgical Aspect," by Alexander Hugh Ferguson. Demonstration: "Microscopic and Macroscopic Sections of the Eye," by L. N. Grosvenor. The discussion was opened by H. M. Richter, and was continued by Drs. C. B. King, Carl B. Davis, C. C. O'Byrne, D. N. Eisendrath, W. F. Coleman, C. C. Rogers and C. G. Buford, and was closed by the authors of the papers.

DISCUSSION OF THE SYMPOSIUM ON EXOPHTHALMIC GOITER.

The discussion was opened by Dr. H. M. Richter, who said: The papers of this evening have served to emphasize the present opinion or diversity of opinion as to the proper treatment of exophthalmic goiter. It is only natural that there should be some diversity of opinion regarding a disease whose life history extends over so long a period of time, and is so variable in its course. It seems to me that to-day we are justified in summarizing our knowledge of the subject as follows:

Without knowing what may be the factor that initiates the change, the recognized peculiar epithelial hypertrophy in the thyroid gland is the pathologic basis of disease. The symptoms of the disease are due to the ensuing change in the secretory activity—a toxemia—or to the secondary changes in the various organs

on which the toxic secretion acts. With the development and progress of the epithelial process there is inaugurated a secondary fibrosis whose tendency is first to bring about a spontaneous cure by means of a pressure atrophy, and, second, to progress beyond the physiologic requirements, and produce extensive destructive changes in the gland parenchyma. The histologic picture of the gland toward the end of a prolonged, severe type of the disease is one of general fibrosis, with epithelial desquamation.

In organs other than the thyroid, namely, the central nervous system, the heart, the various parenchymatous organs, the secondary changes that develop in cases that are allowed to run a prolonged severe course, become permanent, and account for the fact that these cases are not cured, even by the surgical removal of the thyroid. From these premises it seems to me that the following are logical deductions: That surgical interference is called for, 1, in those cases that show a moderate or high grade of severity; 2, in mild cases in which there is a history of a previous severe exacerbation. Surgical treatment is not called for in the very mild incipient cases, and will be of little use in those old cases in which the secondary visceral changes are permanent and not curable even by the removal of the original exciting cause. Proper, general therapeutic measures should be carried out as a preliminary to surgical treatment, to bring the patient to the best possible condition; but from the very nature of the process the improvement of the patient under these measures must be recognized as but temporary in a large proportion of the cases.

The operative mortality is influenced by several factors. Operation on a severe type of the disease without proper preliminary treatment is a mistake that will surely lead to a high death rate. Operation must be avoided during an acute exacerbation. Operation must not be too radical. These patients are not good surgical risks, and palliative operative measures should be carried out in many cases. Kocher, with all his experience and skill, averages three operations for every two patients, and we may well follow his plan.

There are but two points in the technic that I wish to emphasize. In the operation of ligation, the vessel should not be ligated outside the gland. Instead a suture ligation should be carried through the gland substance to include the vessels inside the gland, much after Dr. Ferguson's method of ligation preliminary to thyroidectomy.

In the operation of thyroidectomy the gland should be rapidly delivered through a free incision and the vessels clamped through the gland substance, taking a good bite of the latter with the forceps. After applying a total of three or four forceps the gland can be safely cut off distally to them. By this method this part of the operation can be completed in a few minutes. As to anesthesia. Rectal ether anesthesia is so simple and safe that it would seem to me to be the method of choice. But general anesthesia, whether rectal or otherwise, is surely demanded in a condition in which psychic shock is so grave a factor.

Dr. Clarence B. King:—It seems to me most of the points have been pretty well covered. The only thing I would call attention to particularly is an earlier diagnosis than is commonly made, and appropriate treatment begun at that time. Many of these cases, as we all know, particularly those of us who have seen a number of them, can be diagnosed before there is any marked tachycardia, and perhaps before there is any marked increase in the thyroid gland. The bruit that is heard in practically all cases at the base, in the majority of cases is heard often before any marked enlargement of the gland and before there is any great exophthalmos. If suitable treatment is begun early, putting the patient to bed, giving good hygienic treatment, with the elimination of a meat diet, as Dr. Portis suggested, avoiding mental shock and mental worry, it seems to me that many more of these patients will improve and there will be better results from medical treatment than we have been getting in years gone by.

I am not competent to speak of the surgical aspect of exophthalmic goiter, but I have been impressed considerably by the argument of the surgeons in the past year or so in talking with different ones. The thing that has impressed me more than anything else is the fact that they want to select

their cases, and the cases they have selected to operate on are those in which the exacerbation has subsided; they are cases which perhaps the internist has not cured, but they are getting well. In those cases the surgeon obtains beautiful results from operation. I have in mind a surgeon on the West Side who has had a death rate from operating on these cases, the advanced ones, of 100 per cent. I have found that galvanism improves many of these cases. I do not say that it improves all of them, but I have seen very good results in a number of instances. It is true that while these cases improve very slowly they do get well. I do not claim anything for internal treatment. I do not claim to cure these cases, but, like a great many other diseases, patients with exophthalmic goiter get well spontaneously.

Dr. Carl B. Davis:—Concerning the internal secretion of the thyroid gland, I would like to report the following case: I performed a panhysterectomy in a patient showing a small nodule, apparently no adenoma, in the right lobe of the thyroid gland. This nodule had been present for a number of years without any apparent change. The patient made an uneventful recovery. Two months later she developed a pulse rate that remained above 100. The right lobe enlarged and a tremor and general nervousness developed. Her condition progressed until at the end of three months there was the typical picture of hyperthyroidism. There was no exophthalmos. Patient returned to hospital and the right lobe was removed. There followed a rapid subsidence of symptoms. It is now four months since the second operation and the patient is in normal condition.

In discussion of the case with J. Clarence Webster he informed me that he had performed panhysterectomy in a number of patients showing thyroid enlargements of various kinds. His results had been negative except in a few cases. In one patient there was a previous history of Basedow's disease which was present at the time panhysterectomy was done. This woman died after a short interval with the picture of hyperthyroidism.

Rehn reports a case of thyroid tumor where a double oöphorectomy was performed; the patient died a few weeks later with the picture of hyperthyroidism.

It seemed to me that the result in my case might have been more than a mere coincidence. In attempting to repeat the condition I have removed both ovaries in a number of dogs showing various enlargements of the thyroid gland. The experimental work has been done so recently that I can give no definite report as yet.

Dr. Charles C. O'Byrne:—I have been very interested in this symposium. I would not operate on a case of exophthalmic goiter during an acute exacerbation. I believe, however, there is a period when every case of exophthalmic goiter is a surgical one.

With regard to the primary and secondary types of the disease, many of them if operated on promptly recover. Early operation is exceedingly satisfactory. In the so-called secondary cases the gland may be very much enlarged. I remember the case of a medical student in whom the symptoms were so marked that the young man was nearly compelled to give up his medical course on account of insomnia. He went home, and after resting on a farm for a time returned in a very good condition. He resumed his medical studies, but during the course the insomnia returned. He asked me what I thought was the cause of his insomnia. I examined him, and deep palpation disclosed a nodule in his neck as large as an English walnut. His pulse was nearly one hundred. Insomnia was the notable symptom. After this growth was removed from the neck there was a subsidence of all symptoms within a week. Drainage was unnecessary. The operation was easy and was not attended with danger. The dangerous cases are those with primary enlargement of the gland.

I saw within the same month the case of another student of the same class. This boy came under the observation of Dr. Ochsner, and he will doubtless remember the young man who was suffering from the most severe acute hyperthyroidism it has been my privilege to see. He was put under medical treatment for a number of months, improved, and went home. After a year the disease recurred, and he died within a short time.

I was rather surprised to hear Dr. Zapffee speak of using such large doses of chloretone in the report he read for Dr. Ferguson. I certainly would not take fifty grains of chloretone if I were in my right senses.

I do not think anesthesia was mentioned in connection with the surgical aspects of exophthalmic goiter. I have operated on a number of these cases under nitrous oxid anesthesia, and it has proven very satisfactory. It certainly acts nicely in some of these cases.

Dr. Daniel N. Eisendrath:—I would like to pass around a specimen which I think may be of interest to the members of the society. It shows the inefficacy of one of our methods of treatment of exophthalmic goiter. The details of the different methods of treatment were unfortunately not mentioned on account of the omission of Dr. Ochsner's paper. This specimen was taken from a patient who submitted, at first, about six months ago, to medical treatment for a considerable time, and was then handed over to the surgeons at the Michael Reese Hospital. The patient was a girl, 20 years of age, and when she was first operated on her pulse varied between 132 and 140. She had all the classic symptoms of well-marked hyperthyroidism. At the first operation the right lobe of the thyroid was extirpated. The symptoms did not improve after the removal of the lobe. Then the superior thyroid outside of the lobe was ligated. The symptoms did not improve. About six months after the original ligation on the left side, the right lobe having been removed nearly nine months before that, she came into my service at the Michael Reese Hospital last spring. I found a recurrence of practically all symptoms. The specimen shows what is becoming more and more the belief of surgeons, namely, that ligation of the arteries alone is not sufficient; that we must use more radical surgical measures in the treatment of exophthalmic goiter in many cases. The specimen shows a considerable number of cysts filled with colloid material, and the remainder the parenchymatous type, showing papillary ingrowths, and cytolysis, which was referred to by Dr. Lewis. is one of the characteristics of the pathology.

There are certain features in connection with this subject which I think cannot be omitted. Dr. King has cast a little doubt on the ability of the surgeon to take care of these cases. We do not want the mild cases nor the extremely severe ones. The extremely severe cases have been emphasized by Dr. Ferguson and by every surgeon who has had any experience with these particular types of cases—those which show cardiac changes, etc. These are the cases in which organic changes take place in the heart muscle. They are subjected to considerable rest treatment before surgery is undertaken. These are the cases which, with the best of preparation to overcome the psychic effect of the operation, whether given chloretone or put on rest treatment for a week or two, will, without warning, die on the table from a goiter heart in spite of every effort and a perfect technic. This has happened in the last year in the experience of three surgeons in this city, so that I do not think the dictum ought to go forth, in the first place, that every case of exophthalmic goiter is an operable case. In the second place, every one who has had experience in the surgical treatment of exophthalmic goiter knows, as has been pointed out by Dr. Lewis in considering the pathology, and again by Dr. Ferguson in the technic, that exophthalmic goiter is not like an ordinary goiter on which to operate. The vessels are brittle; there are a large number of adhesions; you have got a poor subject to deal with in a majority of cases; the anesthetic is borne badly, and the operation should be performed by a surgeon of considerable experience. A choice of cases should be made especially, and this should be impressed on every one who sees cases of this kind. The case must be looked into very carefully with reference to the condition of the heart. If the heart shows organic changes, then the patient should be subjected to medical treatment.

In regard to one point which Dr. Portis brought out, I do not know whether he is familiar with the later work of Beebe or not, but it is a work which should not be neglected. Dr. Beebe, at a recent meeting of the Mississippi Valley Medical Association, reported over four hundred cases of exophthalmic goiter which had been treated by his serum, and in the majority of them there has been permanent recovery. We do know that, in spite of medical treatment, these cases relapse.

In spite of surgical treatment a certain proportion of cases relapse. If a case does not show any recurrence inside of six months or two years we can regard that case as cured. I think surgeons ought to take a middle ground in the consideration of this subject, and that we ought to have the cooperation of medical men in this disease the same as we have it in a great many others. We ought to be consulted in those cases in which medical treatment, either serum or rest, has been tried for a time, and then if the patients do not improve we should operate on them.

Dr. W. F. Coleman:—In regard to the electrical treatment of cases of exophthalmic goiter, Dr. Portis said that the *x*-ray had proved of doubtful utility. In fifty-one cases reported by one observer about 70 per cent. of them were cured. In a large number of statistics 75 per cent. of the cases treated by the *x*-ray have made satisfactory improvement.

The other electrical means of treatment in vogue are the galvanic, the high frequency and the static currents. As to the dosage mentioned by the essayist of two to four milliamperes, I will say it depends on the size of the electrode and may vary from 5 to 50 ma.

There is a general impression that electrolysis is necessarily confined to the direct or galvanic current, because it has a constant polarity, but more important than the polar effect is the interpolar effect of the alternating current, which since 1902 I have maintained is electrolytic, and since 1907 scientists abroad have demonstrated it to be.

As to the pole to be used, it is usually stated that the negative must be used. The negative increases the pulse rate, whereas the positive pole lessens it and should be used in tachycardia. The use of the *x*-ray increases fibrosis of the capsule, but it also increases the friability of the tissues, as Dr. Ochsner and others have observed, and if the surgeon has to operate afterwards he is put in a very embarrassing position by the hemorrhage.

As to the different currents used, I have had quite a little experience and will cite one case in which I used the high frequency, the direct and the alternating currents. I used the high frequency locally and generally with couch for one month daily without any improvement in the size of the goiter. I then put her on the galvanic current for one month daily and she improved, so that there was three-quarters of an inch lessening in the size of the thyroid, with lessened tachycardia and general improvement. The alternating current in the third month improved the patient more rapidly than any other, so that at the end of this month she was practically well in every respect.

The use of the alternating and high frequency currents one might dilate on very much because of the trophic changes produced by increasing the respiratory capacity of the blood, the elimination of urea, uric acid, phosphates, chlorids, etc., changing metabolism and improving general nutrition. We must not confine our treatment to the gland but treat the eyes also electrically. For the general benefit of the patient I believe the high frequency current by the couch is the most convenient and effective means of treatment. Locally, I think the best current to use is the alternating current.

Dr. C. C. Rogers:—A short time ago a patient was operated on, one ovary having been removed and a portion of the other, soon after which she developed the typical symptoms of exophthalmic goiter. Her case was considered a medical one. She was therefore taken to a sanitarium, and it was thought she could be cured by the internal medication, but she was not out of bed during her three months' stay in the sanitarium. Her symptoms increased; she was placed in the Willard Hospital on absolute rest, with an ice-bag applied over the heart for two weeks, at the end of which time she was operated on, and the larger portion of the gland removed. She walked out of the hospital in two weeks' time thereafter, and has gained sixty pounds in weight in five months.

Another case that came under my observation was a married woman who, when she was pregnant, had no gastrointestinal symptoms. A few weeks after parturition gastrointestinal symptoms reappeared and remained, attended with diarrhea, the bowels moving six or seven times a day until she became pregnant

again. Then the bowels regulated themselves, and there were no gastrointestinal disturbances. This condition continued through three confinements. She had a goiter. I diagnosed exophthalmic goiter, removed the goiter, and she has had no gastrointestinal symptoms since.

I do not believe that the relation between exophthalmic goiter and the uterus or pelvic organs is known, but there would seem to be some relation between the thyroid gland and the female genital organs.

Like Dr. O'Byrne, I believe cases of exophthalmic goiter are all surgical at some time. They are medical at the beginning, and they are medical usually when they are turned over, the extreme cases, to the surgeon. As Dr. Ferguson has pointed out, once in a while a case that seems to be hopeless in every way can be operated on and get entirely well. It has been said that we as surgeons operate on these cases when they are nearly well. When they are practically well under internal medical treatment, then is the time to operate on exophthalmic goiter. In other words, we should operate between exacerbations just as we would operate for recurrent attacks of appendicitis in the interval. In this way we get good results. We cannot very well operate on exophthalmic goiter when the patient is having acute exophthalmos without killing her. The cases are medical then. They are surgical cases when the internal medical man can get them just as well as he can.

Dr. Coleman G. Buford:—My attention was again directed to ligation of the thyroid arteries through experiments related in that excellent article presented here a few months ago by Dr. Werelius. In discussing his paper I expressed some doubt as to the value of ligation of these vessels in connection with the treatment of goiter of any form, and I emphasized the opinion that its use could not become very general. I expressed that doubt wholly on my familiarity with the literature which relates what has been accomplished in the past in practice. The literature abounds in these experiences and dates back to the time of Billroth and even before his time. Because of the favorable outcome of the doctor's experiments on dogs, I promised myself that I would try ligation of the arteries in the first case of exophthalmic goiter that presented itself and was suitable for this procedure. Within a few weeks such a patient presented herself. I ligated the vessels, both superior thyroids, under local anesthesia, doing it in a very few minutes, the patient making no complaint. When the first vessel was ligated, the patient's physician, who was observing the pulse, a very capable man, one who has done much work along the line of blood pressure, told me that within two or three minutes there was a noticeable diminution of the patient's blood pressure. This patient's blood pressure had been about 180 right along before the ligation: but when taken about two weeks later it was only 130, which is also the present reading. Another interesting point in connection with this case is that the circular measurement of the neck, which was 15½ inches before we operated, a week later was 13½ inches, and has remained so up to the present. It has been about four months since the operation. This patient was very much better for a time; her cardiac symptoms were improved promptly, and the exophthalmia gradually subsided. I have her photographs showing her eye symptoms before and after operation. To-day this patient has no exophthalmia, yet her eye symptoms were pronounced before ligation. There was a temporary improvement both in the cardiac symptoms and in the tremor. After a little while, perhaps six weeks, most of the symptoms again became pronounced, so that now she has tachycardia, a pulse count of 140; the tremor is increasing; there is considerable insomnia, much disturbance of the heart, and I am going to do a thyroidectomy for her very soon.

Dr. Richter has spoken of ligating these vessels within the gland. When Dr. Werelius presented his paper before this society I wondered at the time whether this method of ligation was not a dangerous procedure. I think it is. We have no assurance that we are not going to puncture vessels lying within the gland and have a severe concealed hemorrhage. I prefer very much to bluntly dissect up and expose the vessels, and ligate as in my case; I ligated both sides at a point just before the artery penetrated the gland. I had no trouble whatever from

tetany; and we must remember that authorities are not agreed as to the value of the parathyroids. Some say we get tetany if we destroy the vessel supply to the parathyroids while others say not.

Dr. M. M. Portis:—As the hour is late I will not say very much concerning the surgical aspect of exophthalmic goiter. Nothing has been said in the discussion or questions asked regarding the medical aspect of these cases for me to respond to.

There are two things I want to emphasize as a humble internist, which appeal to me from the surgical side. I agree with Dr. Ferguson that the operative treatment to-day is really better than medical treatment, although the use of Beebe's serum may change that view. However, it is not the treatment of the future, for the reason that it does not seem rational that a surgeon should operate for a hyperactivity of the gland. It is a rather anomalous thing when you think about it. I do not know of anything else in a surgical line where one operates for hyperactivity of an organ. That is one point. The other point is this: I am not impressed so much with Kocher's statistics as are some surgeons. I believe more credit belongs to the statistics of some of our American surgeons and other foreign surgeons, who see their cases in regions where there are not so many primary non-exophthalmic goiter cases. Most of Kocher's cases belong to the secondary type, as has been described by Dr. Lewis, and the mere fact that his operative mortality is so low and his results so good, should be accredited on the ground that they are secondary types in the majority of cases rather than primary. I will say, however, I am more impressed with statistics of large numbers of cases where the patients have the primary type of the disease.

In the future Beebe's type of serum, or some other thyrotoxic serum, which will destroy the thyroid *in situ*, will probably be the ideal treatment.

(*Discussion continued on page 260*)

CHICAGO MEDICAL SOCIETY—ENGLEWOOD BRANCH.

The Englewood Branch met Nov. 2, 1909. It is very gratifying to report that the members of the Englewood Branch are making an earnest effort to utilize the exceptional supply of clinical material which the district furnishes.

This is a matter that has been more or less neglected in the past, partly because we did not realize that we had so much and partly because we were somewhat timid about asking our patients to come to the meeting.

The courtesy shown by the hospital management in permitting the use of hospital cases and in caring for those that come from the outside, together with the interest shown by those having the matter in charge, have made this feature of our meetings intensely interesting to earnest seekers for knowledge. And the end is not yet.

Commencing sharply at 9 o'clock, thirty minutes were taken in showing the following interesting cases. Lack of time unavoidably prevented several others from being brought before the society:

Two sisters, aged 10 and 16, with typical Graves' disease. The younger had been operated upon with very good results, the other was still under preparatory treatment looking to the same procedure.

A woman aged 56, with history of swelling in the front of the neck which interfered with breathing and which was very much improved, the swelling, an enlarged thyroid, diminishing rapidly under the use of thyroid. Later patient was treated in similar manner but soon developed symptoms of hyperthyroidism and treatment had to be discontinued. Both this and the previous cases were examined by a large number and were the subject of considerable informal discussion.

A woman with large postoperative ventral hernia.

A woman, aged 48, with femoral hernia size of child's head, thought to contain ovary, tube and omentum, of thirty-five years duration. Recently causing much pain and discomfort. Both the above cases were in the hospital for operation and an invitation was extended to all present to attend.

Young man with very severe crushing injury to the thumb and hand, thumb being held on only by a few strips of tissue, presenting a perfect scar and with very good functional and cosmetic results.

The society wishes to acknowledge its indebtedness to all who presented cases, especially to Drs. Friend and Lackner for the two cases of exophthalmic goiter.

Dr. Haeberlin read a very comprehensive and instructive paper on "Hyperthyroidism." Dr. Werelius showed a dissection of a thyroid in a living dog and demonstrated the surgical anatomy as seen in animals. He then read a paper on "The Pathology in One Hundred Goiter Dogs," concluding with a demonstration of slides of gland and blood findings. Dr. J. B. Herrick then opened the discussion and was followed by a considerable number who availed themselves of the opportunity, and many interesting points were brought out.

The new manager of the bureau, Dr. J. W. McMahan, was present and was invited to tell the society about the new plans and arrangements of the Business Bureau.

It was evident that the members were also interested in the practical side of medicine and that the Englewood Branch would do its part in the support of the Bureau. Attendance 72. C. Hubart Lovewell, Secretary.

HYPERTHYROIDISM.*

Dr. John B. Haeberlin.

The anatomy, macro- and microscopic; physiology and functions of the normal thyroid gland will be omitted on account of limitation of time.

The thyroid gland belongs to the ductless glands whose internal secretion is necessary to the normal bodily economy. Histologically the gland is very vascular and rich in lymphatics so that it may find this its means of spilling or feeding its products to the organism. We know experimentally that the bodily condition varies with the amount of thyroid secretion or substance supplied to the economy. We may have, therefore, a decreased amount of secretion, or a normal secretion, or an increased amount of secretion. This first condition then would be a hypothyroidism, which is demonstrated clinically as myxedema, juvenile and adult myxedema, myxedema-strumipriva and cretinism.

The second, normal thyroid secretion in which the balance of thyroid supply is sufficient for the individual's normal condition, which would give us a normal physiologic gland. There is in this condition a metabolic equilibrium which is normal.

Third, increased secretion, or hyperthyroidism resulting in the clinical picture which is known as exophthalmic goiter. If one were born without a thyroid entirely one would not belong to this classification. The thyroid being ductless, secretion would be endogenous. Hyperthyroidism then would be an endogenous intoxication of probably altered thyroid secretion to the animal economy. The secretion is undoubtedly altered qualitatively as well as quantitatively.

What then is this substance that produces hyperthyroidism? In the year 1886 Moebius was the first to bring the secretive theory of exophthalmic goiter forcibly to the profession. Bauman of Freiberg was probably the first to isolate the active principle of the thyroid gland. His iodothyrin or thyroiodin has been proven experimentally to be probably the active principle of thyroid secretion. The thyroiodin of Bauman contains iodin found only in organic combinations, a protein molecule. Oswald isolated a thyroglobulin, but it is not active. The thyroiodin and thyroglobulin are found in the colloid and not in the cells of the glands. The active principle as it circulates in the fluid medium of the body has not been determined. Thyroiodin can be administered in conditions of hypothyroidism with favorable results. Thyroiodin when given to individuals with hyperthyroidism increases the symptoms. Important experimental work has been done along this line by Bauman, Greenfield, McCallum, Moebius, Kocher, Ross, Magnus Levy and others. The amount of iodin in the

* Read before the Englewood Branch Chicago Medical Society, Nov. 2, 1909.

thyroid gland would indicate that iodin is an important factor in its influence upon thyroid metabolism. Experimentally we find from 2 to 9 milligrammes in a whole normal thyroid gland. Hyperthyroidism influences various species differently. We know that the herbivorous animals contain the highest iodin content in their thyroid glands, whereas, the omnivorous come next and the carnivorous last. We also know that the carnivorous suffer most from thyroid extirpation and the herbivorous least. We know also that they are greatly influenced by the type of diet they receive following thyroidectomy. From this fact many authorities recommend a meat-free diet in the treatment of hyperthyroidism. The above facts also lead us to believe that iodin administration is valuable in hypothyroidism. We certainly know its value in goitrous conditions. The thyroid gland is not the only gland that contains iodin. The other ductless glands, such as the pituitary bodies, thymus, parathyroids, spleen, suprarenals and ovaries also are said to have an iodin content. There may be an interrelationship between the secretory substances of all the iodin-containing glands. This is still open for determination.

What are the proofs of hyperthyroidism and hypothyroidism? We have a number of things which are apparently positive proof that the clinical symptoms of the disease known as Graves', Perry's or Basedow's disease, or exophthalmic goiter, are due to hyperthyroidism:

1. Extirpation of the thyroid produces a condition called myxedema-strumipriva which closely resembles the clinical myxedema.

2. Myxedema-strumipriva and clinical myxedema are benefited or cured by thyroid administration.

3. Exophthalmic goiter has many symptoms that are directly opposite to those of myxedema.

4. Symptoms practically identical can at times be produced by excessive thyroid feeding.

5. Thyroid feeding to an exophthalmic goiter patient aggravates the symptoms.

6. Exophthalmic goiter is relieved or cured by the partial extirpation of the gland—in other words by reducing the amount of internal secretion fed to the organism.

7. Histologically myxedema shows degeneration and inactivity of the gland; this means less secretion.

8. Histologically exophthalmic goiter shows marked proliferation of the gland parenchyma along with increased secretion.

9. There is increased elimination in hyperthyroidism and exophthalmic goiter.

10. There is a decreased nitrogenous elimination in myxedema and myxedema-strumipriva.

11. In studying the pathologic metabolic changes in myxedema and exophthalmic goiter there is a marked likeness to the processes produced artificially first, by gland extirpation and secondly, by gland overfeeding.

But what produces hyperthyroidism and hypothyroidism? The real causal element producing these conditions of the thyroid gland is unknown. The influences brought to bear upon the thyroid to be over or under active in its internal secretion is simply a matter of speculation. It was in 1840 that Karl von Basedow, a shrewd clinical observer, published in Casper's Wochenschrift his article, "Exophthalmos from Hypertrophy of the Cellular Tissue in the Orbital Cavity." Little did he or any of the other pioneer workers on the disease think that the symptom complex was due to an increased secretion of the thyroid gland. It was Moebius who really gave this its first impetus. Since the time of Perry in 1825, Graves in 1835, von Basedow in 1840, and others, there has been much work done and much theorization or speculation as to the clinical entity or symptom complex comprising the condition of exophthalmic goiter. Hand in hand practical experimental work had been going on until the theory that this condition was due to hyperthyroidism was advanced. Since then each succeeding experiment, both animal and man, tends to prove that this theory is correct, and to-day practically nearly the entire profession takes this view, viz.: That the disease

which is named exophthalmic goiter is due to an altered thyroid secretion, quantitatively as well as qualitatively. We have passed through the hematogenous and neurogenous theories and have landed at present on the thyrogenous theory which is apparently correct. That the clinical symptoms of exophthalmic goiter are due to hyperthyroidism I believe there is no doubt. We have some twenty or more symptoms of hyperthyroidism but the four essential to diagnosis are, tachycardia, goiter, exophthalmos and tremor.

What is this poison that produces these symptoms? Iodothyrin seems to be it, but many claim otherwise. We know what its results are but we do not know positively what it is. A peculiarly important fact that presents itself very forcibly is that hyperthyroidism produces marked symptoms of derangement without any organic change; then as soon as the poison is withdrawn the organ becomes normal. There is no carditis following tachycardia, no gastro-enteritis following excessive vomiting and diarrhea, no pathologic skin findings accompanying the excessive sweatings. In fact, according to Thompson, autopsies on exophthalmic goiter show only goitrous changes. There is no doubt but that these symptoms are due to the poison produced and secreted by the thyroid gland. Thus, hyperthyroidism may be very mild or very severe, leaving its telltale story on the system. We may have hyperthyroidism so slight that a diagnosis is very difficult or impossible. It may give us clinically the *formes fruste* type of the trouble, or it may be prolonged and chronic giving us our long, severe case of exophthalmic goiter, or it may be intermittent recurring at more or less frequent intervals. There is a fulminating, malignant type of hyperthyroidism, a number of cases having been reported.

In hyperthyroidism we have a hyper-active gland. There apparently seems to be an interrelationship between the different varieties of internal secretion. In hyperthyroidism persistence of the thymus is the rule. What this means we do not know. The complemental relationship of the parathyroid is still in a doubtful state. The parathyroids probably have nothing to do with the thyroid. They are closely related anatomically but functionally they differ from the thyroid. The pituitary body is apparently related, Adami giving an instance of gross change in this body in a case of exophthalmic goiter. The adrenals also have some functional relationship accorded them by Sajous. According to his view they are all important but he is probably incorrect. The spleen was thought to bear a relationship but it does not. The sexual organs probably have an interrelationship with the thyroid gland. We know that the thyroid likes to enlarge during puberty, menses and pregnancy. Nephritis occasionally occurs with altered thyroid secretion. It has been proven experimentally that the thyroid secretion, whether hypo or hyper, below or above normal, has a marked influence on metabolism. It seriously influences protein and carbohydrate metabolism. We have principally disturbances of energy, weight and secretion. Von Noorden, in giving the pathology of metabolism of the thyroid gland in hypothyroidism and hyperthyroidism, classifies the metabolism as follows: Energy exchange; protein and carbohydrate metabolism; urinary changes; sweat formation; and food absorption. In hypothyroidism there is generally speaking a diminished metabolic activity of the above specified classification; in hyperthyroidism the opposite is produced. We have a diminished or an excessive pathologic metabolism in process. In normal thyroid secretion we have a happy equilibrium in our metabolic process. Another fact regarding the secretory activity of the thyroid gland is that its size has nothing whatever to do with its activity. This has been proven histologically and clinically. We may have a large colloid goiter and still have no hyperthyroidism, or it is possible to have a very small goiter producing hyperthyroidism of the severest type. Histologically the gland may show areas of localized activity scattered throughout the gland which, so far as is known, does not conform to any law or order. Apparently the amount of hyperthyroidism depends upon its histologic activity, the opposite being true of hypothyroidism. One may have a very small portion of the gland producing a very active secretion and producing marked poisoning, whereas we can have a large gland with a mild poisoning. It is generally thought that the toxic element

produced by the thyroid gland is of thin secretion and not eosin stainable in histologic preparations, whereas the portion of the secretion which fills the vesicles and takes the stain readily is considered by some to be the complement of the poison producing hyperthyroidism.

The thing about hyperthyroidism that to me is most striking clinically is that it is a self-limiting disease. All those who have treated any of these cases know how helpless one is in the treatment of them. Rest, both physical and psychical; ice bag to the heart; bland diet; caring for the elimination; the sedatives, as opium and its derivatives, and a few other drugs seem to help at times. Electricity may be tried and the serum treatment seems unsuccessful. The noticeable feature of the whole matter is that we have no specific. Still, how great a percentage of these cases recover? In the recovery we simply have a process in one's economy which so influences the gland as to cause it to become less active, or there may be an anti-body produced to counteract the poison. The patient may completely recover, be improved or remain stationary, or the hyperthyroidism may advance until a fatal issue. In these fatal and severe cases there is no proof against its being a self-limiting disease. In our infectious self-limiting diseases we also have at times fatal termination. The fatal termination from hyperthyroidism simply indicates an inability of the system to counteract or control the poisons. We have all degrees of hyperthyroidism from the *formes fruste* type to the fulminating, rapidly fatal type. The fact that we have a gland whose secretion may be above or below normal shows that we have a fluctuating condition present and that in the normal there is a mean or average secretion. This makes one think of self limitation. In hyperthyroidism the gland proliferates, over-functionates and then degenerates. In our cured cases of exophthalmic goiter when the gland is examined histologically we find that the gland indicates a degenerative process which probably is brought about by the self-limiting action of the system. In the severer types after due waiting the hyperthyroidism may be reduced by extirpation or in extremely dangerous, fulminating cases by the Werelius operation, this being a ligation of the vessels supplying the gland and a large purse-string suture placed in the parenchyma of the gland. This operation simply cuts down the amount of the thyroid secretion fed to the economy. It also helps the gland to degenerate, which in turn produces less thyroid secretion.

Another very noticeable thing is that hyperthyroidism bears no relation to the other types of enlargement, although one with a simple goiter may develop a hyperthyroidism, but simple goiter per se has no relation with exophthalmic goiter. I believe that hypo- and hyperthyroidism should be classified as metabolic diseases due to faulty internal secretion, not as it is now classified in most text-books as exophthalmic goiter under the head of nervous diseases. The nervous element is simply a symptom of the disease. It should be classified with other diseases we know that are due to faulty internal secretion as Addison's disease; acromegaly; perhaps diabetes; eclampsia and some digestive diseases may belong to this classification. It is also my belief that as we grow to understand the physiology and the pathologic physiology and chemistry of organs which have an internal secretion that we, as medical practitioners, will have a firmer footing and a better understanding in treating these conditions. Just as our truth and knowledge have increased along the line of infectious disease so are we growing along the line of internal secretion. It apparently appears that the future progress along hyperthyroidism will be a clearer understanding of its secretion along with the refinement in diagnosis; that is, with different clinical aspects of hyperthyroidism there will be definite histologic changes to account for it. Early diagnosis always indicates refinement of knowledge and methods. There is, I believe, a definite relation of symptoms to the histologic findings. We have in hyperthyroidism different degrees of symptoms varying with different degrees of thyroid involvement. Wilson, having analyzed pathologically 294 cases, found that certain pathologic pictures repeated themselves so much that they were divisible into four large groups; many, however, apparently form a connecting tie between each group. The clinical history and symptoms were

carefully avoided so that there would be no bias of opinion. This was done before he referred to the history of the clinical case and he found that he was quite accurate in his prognosis. Those who wish for the full classification showing the inter-relationship of symptoms with the pathologic condition of the gland I refer to his work.

Of what use is this knowledge of the thyroid? Previous to 1855 the attention of the profession was all toward external secretion. It was the only condition that they at that time were able to demonstrate. The finer methods of research were not theirs. Claude Bernard, in 1855-57, demonstrated the existence and importance of internal secretion. His work was on the liver, showing how the liver stored up glycogen and gave it out as sugar as demands were made upon it for its use. The results gained from our knowledge as it stands at the present time are wonderful. Only those who have watched the cretin brighten from a dull, listless creature to one of some usefulness in the world can appreciate the results. Again, in myxedema we have marvelous recoveries; all done by supplying a want. On the other hand, those having exophthalmic goiter are greatly benefited by our knowledge of internal secretion. In exophthalmic goiter we watch for a curing or self-limitation of the process and place the patient under conditions to favor recovery. Then if the hyperthyroidism seems progressive and persistent the condition is relieved by operation. A partial extirpation of the gland is done and the deleterious internal secretion reduced. If we are fortunate enough to extirpate the diseased portion of the gland and leave enough for normal supply the results are very gratifying.

I wish to refer to the thyroid work of Werelius. He is in our midst and deserves great credit. His conclusions drawn from looking over the literature and from his own research work, are valuable help. Original work should be encouraged, for it is original work that benefits the entire profession.

CUMBERLAND COUNTY.

The Cumberland County Medical Society met in regular session at the Court House in Toledo, September 21, at 2 p. m. The meeting was called to order by Dr. R. L. Kurtz, president. The minutes of the previous meeting were read and approved. The report of the committee on a fee bill was read and approved. A motion was made, seconded and carried that the secretary submit a copy of this fee bill to every physician practicing in Cumberland county for their signature. Dr. R. L. Kurtz then read a paper on "Repair of Median Nerve, with Report of a Case," which was discussed by the members present. The society then adjourned to meet in Toledo on the second Tuesday in November, 1909.

WILL L. SMITH, M.D., Secretary.

REPAIR OF MEDIAN NERVE, WITH REPORT OF CASE.

RUSSELL L. KURTZ, M.D., NEOGA, ILL.

Without offering any apology for selecting a topic so common as nerve repair, I shall ask your indulgence while I detail an apparently trivial case, which later, however, figured very materially in the future usefulness of the most important member of the body in so far as earning a livelihood was concerned, viz., the right hand. July 21, 1908, Mrs. M. T., Trilla, Ill., housewife, aged 26 years, consulted me with a crippled hand presenting the following conditions: An irregular cicatrix 1 to 1½ inches long extending transversely across right forearm on the palmar side about one inch above the wrist. The skin was cadaverous, dry, slick as though varnished, with a sub-normal temperature requiring a yarn mit for warmth, though the patient's body was perspiring freely from the July heat. She gave the following history: On July 11, 1908, while endeavoring to unscrew a glass fruit jar, the jar was crushed and a small triangular portion of glass penetrated the arm above the wrist, producing intense pain, faintness, nausea, profuse bleeding, with wrist drop and loss of use of the hand. A physician dressed the wound the same day by applying two skin sutures of silk, which were allowed to

slough out as evidenced by the scar that union was by granulation. Her husband remarked that "two white glistening cords" (as he expressed it) were protruding from the wound but were not united. Loss of motion and sensation extended over the following areas, viz., entire hand dropped to complete flexion. Could be pronated only with assistance of other hand or by rolling of forearm. Flexion of all fingers except the little finger was lacking; there was some movement of the metacarpo-phalangeal joints, however. One peculiarity was the lack of ability to oppose the thumb with index finger. The entire hand was flexed to the ulnar side with visible atrophy of muscles. Sensation was absent on palmar surface of thumb, index and middle fingers and on radial side of ring finger, also extending well up palm of hand. The dorsal surface of hand and thumb was unaffected, but anesthesia of posterior surface of index and middle finger existed, gradually disappearing on radial side of ring finger. Points of greatest anesthesia appeared to be tips of index and middle fingers, the former was slightly gangrenous at its tip, the dry type of gangrene, which extended back under the finger nail. Patient stated that index finger had swollen and end of index finger ruptured soon after union of original wound. In the center of the dry gangrene was an excavated ulceration, which proved not amenable to antiseptics but later, after union of nerve, voluntarily healed without local medication. November 11, 1908, just four months after date of injury, with the assistance of Dr. G. T. Ragan, we cut down to the nerve, removed old cicatrix, picked up the severed nerve, clipped off the bulbous ends and united them with plain No. 3 catgut. Apposition was made by removal of a "V" shaped portion from proximal end and the introduction of the distal end, made wedge-shaped to fit this aperture. The ends had separated possibly one inch but were readily brought together without much tension on sutures. Although the original wound was transverse, the fascia was divided longitudinally parallel with the long axis of the nerve, and closed with No. 1 gut, fine silk worm gut being used for skin. By the use of a sterile Esmarch, a bloodless operation with minimum of trauma was obtained. The arm was placed in a cravat sling with curved metallic splint for carrying hand flexed. No improvement was noticeable until the end of seventy-two hours, when patient complained of "pins and needles" sensation in ends of fingers. At the end of one week slight tactile sensation discernible in ends of fingers; motion unimproved; ulcer at finger tip healing. At end of one month sensation had completely returned and small objects, such as a book or drinking-glass, could be grasped firmly. She was given faradic current with massage for weeks. At the end of twelve weeks she was able to carry a two-gallon bucket of water and resume her general housework without any inconvenience. After a lapse of over one year the normal condition of hand continues.

RECAPITULATION.

1. Small punctured wounds may sever important nerves without injury to subjoined tendons or other important structures.
2. A complete restoration of the right hand; the most important member for the bread winner.
3. Sensation in mixed nerves returns early while restoration of motion is very slow.
4. Postoperative treatment is nil short of faradism and massage.
5. Degeneration begins at the distal end of severed mixed nerves.
6. A complete diagnosis should always be made in even minor injuries.

DOUGLAS COUNTY.

The regular quarterly meeting of the Douglas County Medical Society was held in the Knights of Pythias Hall, Tuscola, Friday, Jan. 7, 1910, at 2 p. m. Dr. John Ewing of Tuscola presided. Other members present were Drs. Martin, Reat, Rice, Wiseman, Hall, Carmack, Pinckard, Rutherford, Hilgenberg, Eads, Fuller, Hanson and Blaine. The minutes of the last regular meeting were read

and approved. Dr. J. W. Hamilton of Mount Vernon, one of the state lecturers, then gave the society a very interesting and instructive talk on "Reflexes and Their Significance," laying special stress on their aid in diagnosis. He was followed by Dr. Walter B. Metcalf of Chicago with a paper on the "Treatment of Tuberculosis," in which he emphasized the value of tuberculin as a diagnostic as well as therepeutic agent. There being no other papers the society adjourned.

JOHN EWING, President.
W. C. BLAINE, Secretary-Treasurer.

EFFINGHAM COUNTY.

At the last meeting of the Effingham County Medical Society, Dec. 14, 1909, the following resolutions were unanimously adopted:

WHEREAS, It has pleased the all-wise Creator to remove from our midst an honored brother and member, Dr. W. H. St. Clair; therefore be it

Resolved, That we, the members of the Effingham County Medical Society, hereby express our deep sorrow in the death of Dr. W. H. St. Clair. He was one of our oldest and most honored members, having been for several years the vice-president of this society. He was also at the time of his death a member of the American Medical Association; and be it further

Resolved, That in memory of the deceased these resolutions be sent the family as a token of our esteem for them and as an expression of our regard for our late comrade.

P. I. CROMWELL,
F. BUCKMASTER,
C. F. BURKHARDT,
H. LAPHAM, SR.
Committee.

The following officers were elected for 1910 by the Effingham County Medical Society: President, Dr. P. I. Cromwell, Effingham; first vice-president, Dr. J. N. Mathews, Mason; second vice-president, Dr. F. Buckmaster, Effingham; secretary, Dr. H. Taphorn, Effingham; treasurer, Dr. C. F. Burkhardt, Effingham; member medicolegal committee, Dr. L. Dunn, Elliotstown; delegate to meeting of state society, Dr. C. F. Burkhardt; alternate, Dr. E. L. Dannon, Effingham; board of censors (five elected), Drs. G. H. Haumesser, Shumway; J. N. Mathews, F. Buckmaster, J. H. Walker, and F. W. Goodell, Effingham.

DR. H. TAPHORN, Secretary.

FULTON COUNTY.

The fiftieth meeting of the Fulton County Medical Society was held in the Churchill House, at Canton, December 15, 1909, and was called to order by President Robb. The minutes were read and approved after including Dr. Harris among those receiving thanks for taking part in the annual meeting. Dr. Standard was elected to membership. Dr. Shallenberger moved that Dr. Ray be allowed $10 on account of an accident to his automobile during the canvass of the county preceding the annual meeting. Carried. Dr. Shallenberger moved that the secretary be allowed $50 for his service to the October, 1910, meeting. Carried. Dr. Simmons presented a paper on "Pneumonia," Dr. Rogers one on "Thyroglossal Fistula," and Dr. Coleman one on "Gall Bladder Infection." The papers were freely discussed. Those present were Drs. Robb, Coleman, Rogers, Shallenberger, Standard, Chapin, Grimes, Allison, Blackburn, Simmons and Ray. The following program was adopted for the May meeting: "Salicylic Acid as a Food Preservative," Dr. P. H. Stoops; "Legislative Injustice and Political Apathy a Weakening Factor in Medical Organization," Dr. H. C. Mitchel, Carbondale; "Active and Passive Immunity," Dr. C. N. Allison; "Our Protective Feature," Dr. H. N. Moyer, Chicago.

D. S. RAY, Secretary.

M'LEAN COUNTY.

The December, 1909, meeting of the McLean County Medical Society was addressed by Dr. Watson Gailey on "The More Prevalent Eye and Ear Diseases." The author of this paper called attention to "suppurative conjunctivitis," urging Credé's method of prophylaxis in every case, both rich and poor. Dr. Taylor spoke on "Some External Operations Connected with the Eye," in which he advocated the use of the electrocautery point in certain diseases of the lid and of the nasal duct. Drs. C. P. Wikoff and F. P. Boyd of Bloomington and Dr. W. G. DuFore of Chenoa were elected to membership.

MASON COUNTY.

At a meeting of the Mason County Medical Society, at Havana, Ill., Jan. 3, 1910, the following officers were elected for the year: Dr. A. F. Burnham, Mason City, president; Dr. E. W. Paul, Forest City, vice-president; Dr. F. F. Garrison, Havana, secretary-treasurer, Dr. H. O. Rogier, Mason City, delegate. Dr. C. H. Steubenrauch of Havana was voted in as a member of the society. The next meeting will be held April 4 at Mason City.

F. F. Garrison, M.D., Secretary.

MORGAN COUNTY.

The annual meeting was held in Jacksonville, Dec. 9, 1909, at which the report of the outgoing officers was read and the following were elected to serve the society the coming year: President, Dr. Grace Dewey; vice-president, Dr. F. A. Norris; treasurer, Dr. A. L. Adams; secretary, Dr. George Stacy; librarian, Dr. Carl E. Black; censor for three years, Dr. E. F. Baker; delegate to state society, Dr. E. L. Crouch; alternate, Dr. Josephine Milligan.

George Stacy, M.D., Secretary.

The society held its first meeting of the new year in its rooms at the Public Library, with Dr. Grace Dewey presiding. Members present: Drs. Bradley, Dewey, Crouch, Gailey, Hardesty, Milligan, Ogram, Stacy and Woltman. Dr. T. O. Hardesty, the County Physician, brought up the question as to the desirability of reporting cases of tuberculosis so that a map might be made of the cases existing in the city. This was discussed by the members present but no definite action as regards this particular disease was taken; however, the appointment of a committee was authorized whose duties it will be to formulate the society's ideas along the line of prevention of contagious diseases in general, which committee is to report at the February meeting.

Dr. George Stacy presented a report of a case of acute lymphatic leukemia of about forty days' duration in a girl aged 4½ years, which showed a greatly enlarged liver, spleen less enlarged, involvement of lymphatic glands of cervical region, tumefactions in both cheeks and others scattered about the head. Necrosis was present in the mouth with hemorrhagic discharge and alveolar infection, exophthalmos, marked; an anemia, pernicious in type, existed, together with a low grade leucocytosis, 17,920. Differentially there was a relative increase in the small lymphocytes and the leucoblasts or large lymphocytes. Red cells were distorted and megaloblasts, megalocytes, and normocytes were present. There was no hematuria.

Treatment was of no avail. Fowler's solution in increasing doses, as recommended by von Leube, was given; also elixir of iron, quinin and strychnia as a tonic. Bowels were kept open with phenolphthalein and salt solution enemata. After running the acute course as mentioned above, patient died. No autopsy permission was granted. This case seems to fall with those in which we have all the features of an acute leukemic process except the lymphemia.

Following the case report, a general outline of acute lymphatic leukemia was given and the close relation of acute leukemia to sarcoma, Hodgkin's disease and

chloroma was shown. Recent work done by Emerson, Ottenberg, Auer, Proscher and White and others was referred to. The main hope in this now fatal malady lies, we think, in the recognition of its specific cause. Perhaps most is to be expected from further studies of Auer's bodies, none of which were seen in this case.

Dr. Grace Dewey reported blood findings in eight cases of acute leukemia, all of which presented lymphemia. White cell counts ranged from 89,000 to 665,000. Three cases were the lymphoid type, one being acute.

Dr. B. S. Gailey, speaking from the standpoint of the ophthalmology in acute leukemia, said that the smeary appearance of the disks from diffuse hemorrhage is quite characteristic. When one is able to make out arteries and veins at all, they are difficult to differentiate. Eye changes come late and are at best only confirmatory. Exophthalmos and ecchymosis are common. After discussion and examination of specimens the society adjourned.

In February we expect to hold a joint meeting with the pharmacists of the county to discuss the United States Pharmacopeia, especially as regards the ninth decennial revision. GEORGE STACY, M.D., Secretary.

SHELBY COUNTY.

The Shelby County Medical Society met Jan. 11, 1910, at Shelbyville. The following officers were elected: Dr. T. Ewing Cherry, Cowden, president; Dr. Theo. Thompson, Shelbyville, vice-president; Dr. Frank P. Auld, Shelbyville, secretary-treasurer. Drs. J. N. Phifer of Stewardson and B. F. Stults of Moweaqua were elected to membership. Dr. F. P. Auld was chosen delegate and Dr. W. J. Eddy alternate to the Danville state meeting. Methods were discussed concerning the education of the public on hygiene and public sanitation, and it was decided that steps be taken at a future date to hold a public meeting, inviting the public in general to attend. It was decided to hold the next meeting on April 5, 1910, for which a program would be arranged by the program committee.

F. P. AULD, Secretary.

TAZEWELL COUNTY.

The following resolutions were adopted by the Tazewell County Medical Society, Jan. 11, 1910:

WHEREAS, It is often desirable that the physician know something in regard to the general disposition of particular individuals as to the payment of medical fees, and,

WHEREAS, It is not always advisable for the physician to make direct inquiries concerning the same, and,

WHEREAS, Each physician would be greatly benefited by receiving credit reports on otherwise unknown persons, therefore be it

Resolved, That the Tazewell County Medical Society do hereby establish a credit reporting department, and also

Resolved, That it shall be the duty of the secretary of the society, on the request of any member in good standing, to ascertain as nearly as possible the credit standing of the person asked about, with those with whom he has previously transacted business, and to report the same to the member making inquiry; also

Resolved, That it shall be the duty of each member of the society, when asked by the secretary, to make a true and honest report of his credit rating of the person being investigated. It shall also be the duty of the physician asking the report to give full name, occupation, present and past address of the person, and, if possible, the name and address of physicians previously consulted; furthermore, be it

Resolved, That the secretary shall keep in a book, especially used for that purpose, a record of the reports received, which shall be open to any member of the society at any time.

Resolved also, That this credit service shall be free to members (in good standing) of the T. C. M. S., the expense of getting the reports being taken from the society treasury, but that non-members shall pay in advance 25 cents for each report asked for; finally

Resolved, That reciprocal relations may be established with other credit rating societies, associations and companies for the mutual exchange of services.

F. C. Gale, Secretary.

UNION COUNTY.

The Union County Medical Society met in the Chemical Laboratory, Benton Hall, Union Academy, Anna, Ill., Wednesday, Dec. 29, 1909, at 2 p. m. The following members were present: Drs. J. J. Lence, E. V. Hale, Karl Sanders, A. J. Lyerle, S. C. Martin, Eugene Cohn, J. C. Stewart and W. G. Morrow. Dr. Karl Sanders read a paper on "The Relation of One Physician to Another." Rev. Craighead, pastor of the First Presbyterian Church of Anna, read a paper on "Religion and Medicine." The following officers were elected for the ensuing year: Dr. T. J. Rich, Anna, president; Dr. Eugene Cohn, Anna, vice-president; Dr. E. V. Hale, Anna, secretary-treasurer; delegate, Dr. Eugene Cohn; alternate, Dr. J. I. Hale; censors, Drs. L. J. May, T. Lee Agnew and A. J. Lyerle. On motion, Rev. Craighead's paper was ordered sent to the Illinois Medical Journal for publication.

Adjourned.

E. V. Hale, Secretary.

WESTERN ILLINOIS DISTRICT MEDICAL SOCIETY.

The annual meeting of the Western Illinois District Medical Society was held at Quincy, Oct. 29, 1909, at the Elks Club Rooms. The following officers were elected for the ensuing year: President, J. H. Rice, M.D., Quincy; vice-presidents, Waldo Fisher, M.D., Alton, and J. G. Franken, M.D., Chandlerville; secretary-treasurer, W. P. Duncan, M.D., Jacksonville; board of censors, R. J. Christie, M.D., Quincy; L. J. Harvey, M.D., Griggsville, and L. H. A. Nickerson, M.D., Quincy.

The following excellent program was carried out: "Evolution in Borderland Cases," J. L. Wiggins, East St. Louis; "Should the Country Practitioner Specialize? In What and Why?" J. G. Franken, M.D., Chandlerville; "Treatment of Compound Fractures," W. W. Williams, M.D., Quincy; "Treatment of Fracture of Femur with Exhibition of an Original Splint," W. E. Gilliland, M.D., Coatsburg; "Fractures of the Hip," Clifford U. Collins, M.D., Peoria; "Opening the Discussion on Fractures," C. E. Black, M.D., Jacksonville; "Suburban Major Surgery Without Hospital or Trained Nurse; Report of Cases," J. Estill Miller, M.D., Pittsfield; "Traumatism as a Factor in the Production of Insanity," R. T. Hinton, M.D., Jacksonville; "Clinical Report—Neuritis and Complications," L. J. Harvey, M.D., Griggsville. There was a good attendance and much interest. The next meeting will be held at Alton in 1910.

SHOULD THE GENERAL PRACTITIONER SPECIALIZE? IN WHAT AND WHY?

J. G. Franken, M.D., Chandlerville, Ill.

The pyramid as an architectural structure is the safest of all edifices, for it is built on a broad foundation. Any knowledge built like a pyramid on such a base is fundamental, for a superstructure cannot topple. The science of medicine must ever be based upon such a foundation. General medicine precedes specialism. The specialist who is the best "generalist" is the safest in his chosen "specialty."

Of such the country is replenished to satiety, especially where environments for an open field are inviting. Naturally the larger cities offer the greater inducements. This specializing is partly from choice, partly from necessity. As

no one can have thorough knowledge in all "isms" and "ologies," so the *vox populi* calls on the fittest for special labor. This is right, because these are the natural sequences of existing conditions.

But with a surfeit of specialists in the larger cities the question arises, how to furnish them with material for the chosen work? They look to the general practitioner for material.

Is the general practitioner less equipped by nature, by education, ambition or natural tendencies? Should he be the source of supplies, the undeveloped mine, an ever yielding resource to the specialist? Yes, and no.

For several years the medical journals have been surcharged with views expressed pertaining to the relation of general practitioner to the specialist, fees paid and fees divided. Does the specialist need the assistance of the general practitioner any more than the general practioner needs the specialist?

I am a general practitioner in a small town, and attend to the work under my care. Am I dependent on the specialist? Absolutely I must have his help. Do I consult him for my financial gain? No. For his special pecuniary benefit? Not if I can help it. But solely to benefit the health and condition of the patient entrusted to my care. The patient is mine, to treat, to cure if I can, to ameliorate his sufferings if I cannot cure. Is that all? No. It is my duty to procure aid when I can to restore him to health and happiness. When my means are exhausted I seek help elsewhere.

We are here confronted with the query, what constitutes a specialist? Am I a specialist in such a case? I may be and should be. I should be at least a theoretical specialist, and I seek the help of a practical specialist.

As a homely illustration: I drive horses, I know my horses must be shod so they can travel safely and well and preserve their feet. Can I shoe them? Theoretically I can, but the practical horseshoer does the work, sometimes aided by my suggestions and instructions.

My patient has been and is under my care; I know him, I have studied him, have diagnosed his case; I know what must be done for him. Theoretically I am a specialist. I consult a practical specialist, I give him the history of the patient, which he could ascertain from the patient only by long and painstaking examination, and then not completely without a clinical history of the case. He, by reason of special preparation, special education, special armamentaria for chosen work, in which he has perfected himself, is my help for my patient.

What about compensation? Each receives compensation for work done. If the patient remains in my care for after treatment, the special work was an interstice only in the course of ailment and the specialist receives pay according to skill shown and help rendered, and is foreign to my services.

Should, however, the patient remain under the specialist's care until restoration of health, or until death, as the case may be, my labor ends when I put the patient under his care, because I have done all I could. I have given him my care and my best advice and charged him for the same. I am not entitled to further fees where I render no service, and neither patient nor specialist is under pecuniary obligation to me.

Do I voluntarily and willingly give up my work and turn it over to a specialist? Not if I can help myself. I must learn to specialize. I must know in what particular lines of work I must depend on myself, necessitated occasionally, however, to call consultations with my confreres. In what lines of work I must specialize theoretically and seek the aid of a practical specialist. I must know what to cull out of my practice and send to the specialist, who is better equipped by special preparation and with special armamentaria, who can help the patient where I cannot.

In the category of diseases where I must depend on myself and where I must specialize, are the acute, infectious, contagious and exanthematous diseases of both old and young. Although self-limited, these diseases need strict care and attention. Medicine and nursing will frequently turn the tide and save the patient from an untimely death. The so-called bowel complaints of little children during their first and second summers, acute and subacute, milk infection, aug-

mented by hot weather and unhygienic surroundings, call forth special effort, training and labor of the general practitioner. I must of necessity be my own specialist. More than that: here lies the rise or fall of my success in the community where I have thrown my lot and where I depend on my work for my livelihood. If I can save the child I have the family my firm support in furtherance of my practice. Here also will show my social and natural traits, besides my special skill, if I can gain the confidence and love of the child. You cannot deceive a child, the lines written by the poet, "I do not like thee, Dr. Fell; the reason why I cannot tell, but this I know so very well, I do not like thee, Dr. Fell," have more truth than poetry in them. My soothing, encouraging influence on the child has its beneficial influence and belongs to the treatment.

Next to children's diseases comes obstetrics. I must of necessity thoroughly understand my specialty. Child-birth admits of no time for delay or consultation. Luckily, when all conditions are normal, any midwife or old "granny" may succeed in helping the youngster discover America, for nature is lavish in asserting herself and restoring to normal. But when emergencies arise, when placenta prævia presents itself, when albuminuria has caused eclampsia, when presentation is abnormal, when a pelvis is contracted, when podalic version has to be resorted to, when a prolapsed cord threatens the life of the child, when forceps have to be applied, when an anesthetic has to be given, when a cyanotic baby has to be resuscitated, when post-partum hemorrhage blanches the face of the mother and death seems imminent, when an adherent placenta has to be removed, when hour-glass contraction shows itself, when an atonic uterus fails to contract, or threatens subinvolution, when lacerations of cervix uteri or perineum are unavoidable and must be repaired, when shock or prolonged labor exhaust vitality, I must know what to do; I am the specialist.

In the field of surgery I must specialize; fractures and dislocations are best reduced before the four cardinal symptoms of inflammation; dolor, calor, rubor, and tumor claim too much attention. Thorough knowledge of anatomy plus mechanical skill will enable us to reduce a dislocation before much swelling obscures diagnosis. Familiarity with mechanical appliances, after the contour of a broken limb has been restored to normal, will aid in making my patient comfortable. Nor must I forget my knowledge of administering an anesthetic to facilitate reduction of fractures or dislocations. In minor surgery, cuts, bruises, contusions, lacerations, insignificant in the eye of a specialist and in themselves of little consequence, are, however, of value to us, if the patient is made comfortable soon after the accident causing same occurs.

There is another class of patients which should remain under my care, and where a specialist, when these patients come to him, could even more specialize, and that is the chronic growler, the one who is always ailing, ever seeking new cures, never satisfied with any one, who thinks he is a martyr, a scapegoat of all sins of omission and commission. Here is where our friends, the enemy, the quack, the faker, the advertising so-called specialist, has all of us at a disadvantage. He is, in a sense, a specialist. He has studied P. T. Barnum's motto: "The American people like to be humbugged," and he does it. He is a specialist in suggestive therapeutics. It is not for us to emulate his modus operandi, but from him we can learn that suggestive therapeutics, applied in a legitimate way, will undoubtedly be of value to us. This specialty is so broad, so far reaching, so comprehensive, that the merest allusion to it here might suggest that we should all generalize in it before we make any attempt at specialization.

The line of work in which I must be the theoretical specialist, and where I must seek the help of the practical specialist, is not so circumscribed, for it may include some of the diseases mentioned where extraordinary skill and mental acumen are needed. But all purely surgical cases of the major type must be referred to the specialist, who has made surgery his life work. After my diagnosis, corroborated by the surgeon, the patient must, if possible, be removed to a well equipped hospital. I regard it as almost criminal to undertake a major surgical operation outside of a hospital, except in emergency cases, where sound judgment may see a possible preservation of life, as against a positive death by

delay. It does not speak against my skill as a diagnostician or prognostician to refer this class of cases to a specialist surgeon. I render my patient a most decidedly valuable service by doing so. I, as a theoretical specialist, prove my worth by pursuing the right course. This field of work, from plainly surgical cases to borderline cases, is very extensive, and gives me ample scope for specializing in theoretical surgery.

There is a class of cases that come to the general practitioner which do not require any special skill or great mental acumen to diagnose, which any ordinary doctor of medicine diagnoses readily, but which require, nevertheless, special treatment by specialists who have made themselves proficient by extra study and by procuring special armamentaria, and which the general practitioner should cull out from his work. He has neither the time nor the skill and is not expected to render them aid except in emergencies, and then only as first aid to the injured. In this category come eye, ear, nose and throat work. I may treat a simple conjunctivitis, or possibly a trachoma, I may remove some polypi, cut away a faucial of Luschka's tonsil, or with a Gottstein curette clear away some adenoids. but I think it safer for the patient to let the specialist attend to this kind of work, and referring these cases to him will not lose me any prestige. I may stop the earache, remove a foreign body from eye, ear or nose, but when delicate work on these organs has to be undertaken, let the eye specialist restore sight by fitting spectacles or removing cataracts; let the nose specialist straighten a deviated septum or drain ethmoid cells; let the ear specialist restore hearing by puncturing a tympanum or doing a mastoid operation. I have neither time nor practical knowledge to infringe on their domain.

One vast class of patients come under any or all of these heads. (1) When I may specialize; (2) when I may theoretically specialize, or (3) when I may refer any or all to a specialist; this is the mental and nervous type of patient. Specialization of this type depends to a great extent upon the knowledge to classify them; to know what kind to keep at home and what class to refer to private or public institutions. When mental aberration is so pronounced that a jury as prescribed by law finds no difficulty in committing the patient to an institution for the care of such unfortunates, the general practitioner is absolved from all further care; but often we have to deal with patients who by force of circumstances and family ties are kept at home. These are frequently our trying cases. In a rural community you may find an imbecile child, a halfwitted boy, a hysterical girl, a paretic man, paranoiac woman, an old man or woman afflicted with senile dementia; many or all possibly subjects for public asylums. But they show no maniacal, suicidal or homicidal tendencies, hence their immediate relatives prefer to keep them at home, "do" for them what they can, and the family physician has a condition and not a theory confronting him. The family physician often wishes for more strictly enforced laws pertaining to the public care of these patients; but he is expected to prescribe for them, aid them if he can, ameliorate their luckless condition, and necessity calls forth latent abilities; he sees that special knowledge and special training prove to him that much good may be accomplished.

The field of labor for the general practitioner is too large to admit of special specializing, but I have tried to show that he can find application of thorough knowledge of at least a few places of applied medicine, and that it behooves him to remain wide awake, for specialization is, after all, greater proficiency in his work. He finds that as yet he is not superfluous nor a non-essential factor in his great work and noble profession.

FRACTURED FEMUR

W. E. Gilliland, M.D., Coatsburg, Ill.

Mr. President and members of the Western Illinois District Medical Society: I have been requested by the members of the Adams County Medical Society to present to you my method of treating fractured femur and exhibit to you an apparatus which I have devised for that purpose.

Every one who has treated a fractured femur has found out that the tension and spasmodic action of the powerful muscles of the thigh which causes the ends of the bones to pass or overlap each other, producing shortening and deformity, is the resistance which they are sure to meet and which they are required to overcome.

The treatment of these fractures is best accomplished by position, extension and counter extension and fixation.

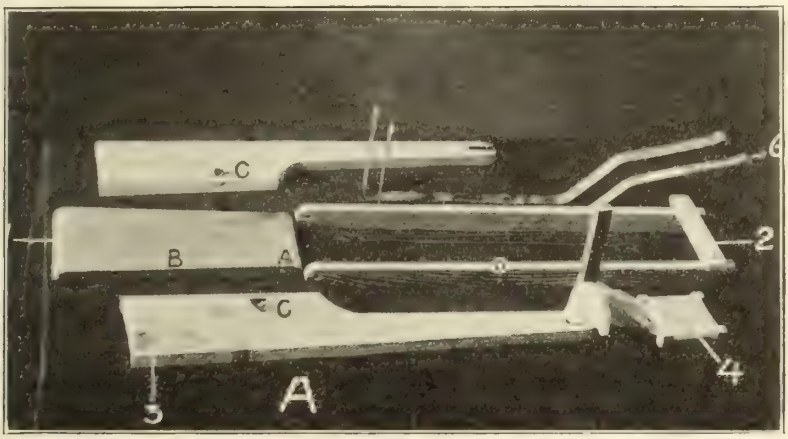


Figure A.

The apparatus which I have devised and which I have used for a number of years employs all these principles in the most perfect manner, in a manner calculated to get all the good out of them that is in them.

The apparatus which I will show is composed of a body piece, a pair of legs united by a cross piece near the foot, a pair of arms, an equalizer and a cross bar

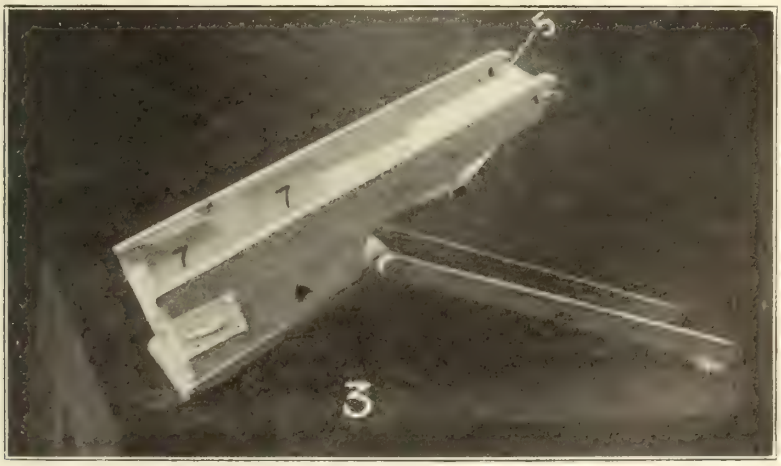


Figure B.

all made of wood. Two brace rods with hooks on ends made of heavy wire, several wood-screws, four squares of adhesive plaster with tails of strong cotton bandage firmly sewed to them, and some pieces of common roller bandages, adapted in length and width to the size of your patient. These comprise the outfit.

The splint or body should be just long enough to reach from the tuber ischium to the bend of the knee and about two inches wider than the transverse diameter

of the thigh. The ends are rounded off to prevent sharp corners from cutting into the flesh. The legs are fastened on either side at *a* with wood screws, leaving them loose enough to form a hinge. At *b* a screw is inserted on which the brace rods are to be hooked.

The two legs united with a cross bar at the lower end are represented at No. 2. They are united to the body piece at *a*, with wood-screws inserted upon which the brace rods are hooked. From one of these legs to the other pieces of bandage are extended, upon which rests the leg below the knee.

No. 3 is one of the arms made of wood shaped as shown in the cut. The upper end should be nearly as wide as the antero-posterior diameter of the thigh. They should be about twice as long as the body splint. They are fastened to the upper surface of the body piece with wood screws inserted in the gain at *c*. They should just touch the sides of the thigh. They also hold the cross bar or brail No. 5 in place, at their distal ends. These arms are concerned chiefly in making extension and counter extension. No. 4 is the equalizer and single-tree. It plays freely between the arms beyond the knee. It should be as long as the transverse diameter of the knee, and wide enough to keep the tails of the lower adhesive placques distended.

No. 5 is the brail or cross bar and is held in place by the slots in the end of the arms. To it is attached the strong elastic web that contributes the elasticity to our extension.

The wire brace rods with hooks on them lie between No. 2. They extend from the screw on the outside of the body piece at *b* and extend to the screw on the inner surface of the leg at *d*. They hold the frame in a double inclined plane position.

No. 6 is a representation of a steel arm that might well be substituted for the wooden arms numbered three. They are intended to be used in compound fractures where it is necessary to have access to the limb for purpose of applying dressing.

No. 7 is the squares of adhesive plaster with tails attached. B is a representation of the frame of the apparatus unoccupied.

We will want a number of pieces of common roller bandage. They should be 2½ inches wide, and long enough to go once and three-fifths around the limb. Have them long enough and you may cut them off as you apply them. Draw a line down the center of the body splint, and fasten this many-tailed bandage to it with tacks, commencing at the upper end, and allowing each plica to overlap its fellow at least one-half. Before placing the leg on the splint cover the heads of the tacks with a layer of cotton or a strip of bandage. Fasten the legs to the body as above described, and fasten some pieces of bandage across their upper surface and fasten each on the outside of the leg. This may be done also with tacks.

While you elevate the limb, have an assistant place the splint under it, pushing it up until the upper end impinges on the tuber ischium. Now the limb lies full length on the splint. Take hold of the splint opposite the knee and raise it up until the rods can be hooked on the screws. Now you have the leg on a double inclined plane. Let your assistant take hold of the leg below the knee with one hand and the ankle with the other and make firm traction, while you ascertain if the fragments are in apposition. Being satisfied, you are ready to apply your many-tailed bandage. Take hold of the initial end with your right hand and turn it neatly across to the opposite side of the thigh. Then take the second end in your left hand and turn it over the thigh in the opposite direction covering in the initial end, and thus proceed until all the ends are employed; then fasten with a pin. In applying this bandage be careful not to cover in the tails of your adhesive squares. It will surprise you to see how neatly this bandage embraces the limb, how firmly it holds your adhesives and how perfectly it fixes and immobilizes the whole limb. There is not a spot anywhere that can be chafed by friction or injured by pressure. While this is being done let your assistant keep up his traction.

Now we are ready for the arms. Observe where the *gains* are cut, and place the proper ones on each side of the limb just close enough to touch the limb gently, and just as high up as they can go without impinging on the perineum. Now fasten them to the body piece with a screw inserted in the hole in the *gain* on the outside of the arm. Now place the cross piece in the slots at the distal ends of the arms. Now bring the tails of the upper adhesives around the shoulders and fasten them on the outside of the arm as shown in the cut B. Now fasten the tails of the lower adhesives firmly to the equalizer No. 4, then fasten the elastic web around the cross piece No. 5, pass it around the equalizer, making it as tight as may be thought sufficient. One thing more, loosen one end of the bandages that cross from one leg to the other and adjust them to the contour of the calf, and be careful not to put one under the heel. You all know how the heel is given to kicking when subject to pressure.

Now I wish to call your attention to the mechanism of this splint, how perfectly it accomplishes its object. Remember, the principles to be employed are extension and counter extension and fixation or immobilization. Notice that the adhesive placques get a firm hold on the thigh above and below the site of fracture. The ones above the fracture, when turned around the shoulder of the arm and fastened there become the basis or counter point of our extension. Those below the fracture, when fastened to the equalizer and by the elastic web to the cross bar, become the true extensors. This extension and counter extension, being directly in the line of the axis of the bone, is the most perfect attainable. By the use of the elastic extension the spasm of the powerful muscles is worn out in the shortest possible time, and there is no danger of complete relaxation at any time.

I now want to call your attention to the double incline plane. I have already stated that position is one of the principles employed in the treatment of these fractures. In some of the older methods of treating fractured femur, a common deformity was an everted or an inverted foot, caused by a failure of the apparatus to prevent a rolling of the foot either outward or inward, and twisting the fragments on each other. A sore heel contributes to this effect, and if allowed to go on until the bones are united the deformity becomes permanent.

The double inclined plane obviates this difficulty completely. But the double inclined plane performs another important office. It gives your patient a most comfortable position. You all know how unsatisfactory the treatment of any fracture is when your patient is not comfortable. After a few days your patient will spend his waking hours in a sitting or half reclining position. If the fragments are properly coaptated he will have no pain, and will enjoy himself in reading, writing, sewing, etc., and will be able to eat his meals in an upright position, and by placing both hands under him on the bed he will be able to move from one side of the bed to the other or lift himself on the bed-pan, etc.

After three or four days, when the spasm of the muscles has worn off, there is no danger in undoing the bandage and examining the limb thoroughly or giving it a sponge bath. This gives you an opportunity of ascertaining whether or not the fragments are accurately adjusted. As soon as I am satisfied that all is right I am in the habit of giving the bandage a heavy coat of starch, after which it seldom needs any attention until the end of the treatment. While I have had no experience with it, know of no reason why this apparatus, with the steel arms instead of the wooden ones, would not be as good in all respects for treating compound fractures of the thigh, say a bullet wound or a wound where the bones had protruded through the integument. Indeed, if I were making a new splint and had access to a blacksmith I would use the steel arms for all kinds of fractures.

There is one other quality in this apparatus I would call your attention to, it is the best adapted of anything I have ever seen for transporting a patient with a broken femur. As soon as the starch is dry you can start with him. Place him on a cot and put him in a spring-wagon and haul him to the depot. Then, if you have but a short distance to go, set cot and all into a baggage car, and he will go all right. If you have some distance to go avail yourself of the lower berth in a sleeper, and, with a nurse to attend to his wants, you can take him to the end of the road, and that, too, without danger or suffering.

The history of this splint is somewhat interesting and will illustrate some of its good points. It is the result of a process of evolution. My first case of fractured femur was in a girl aged 11 years. The fracture was near the middle and I had no difficulty in determining that there were three fragments. I put it on a well constructed Liston long splint. It was July, and the temperature around the hundred mark. On the third day my patient was in so much misery that I was compelled to take it off. The skin was off wherever the splint touched. This set me to thinking. I then stretched the limb out on a hard mattress and put a weight to the foot, and went away to do some more thinking. At my next visit I found the foot laying over on its outer side. I then put her limb on a double inclined plane and hitched my weight to the knee and elevated the pulley in line with the bone. This looked pretty good to me. Here is where I got the first idea of the value of the double inclined plane. She was a restless little mortal and I soon had to fasten her body to the bed frame, but she was comfortable. I soon saw that her movements, to find a comfortable position, produced a tendency in the limb to bow outward at the site of the fracture. I corrected this by putting on a plaster of Paris splint applied to the outer side of the limb. I got a perfect result, but here is where the idea of fastening the limb to the posterior splint was born.

The next case was a boy aged 17 years, with a simple fracture a little above the middle. I immediately put the limb on the double inclined plane and fastened it with the many-tailed bandage to the posterior splint. While conjuring up a support for my pulley the idea of putting arms on the splint occurred to me. At my next visit I took a pair along with me. Without taking the limb off of the splint I opened it up, applied the patches of adhesive placques, made an equalizer, took one of his new suspenders for an elastic web, and my splint was passed the stage of incubation. It was a reality, a working entity.

I will now give you another case in which, while the same principles were employed, the apparatus had to be considerably modified, and illustrates the fact that the surgeon must be full of resources. An old man at the Adams County Almshouse was found one morning in his room with the femur broken just above the condyles, and the lower fragment was split in two. Here I had a man 76 years old, insane and a lifelong epileptic. It occurred to me as a tough problem. I made a box and cut the ends down to form the double inclined plane, filled it with stones so as to make it heavy, nailed my posterior splint to one end of it and covered the lower end with a board, also with a hole cut in it to accommodate the heel. I put the limb on this box and fastened it from the heel to the perineum with a many-tailed bandage. I had no difficulty in adjusting the fragments, and with a couple of strips of adhesive plaster was able to hold them so. In six weeks I had a bony union with but little deformity and a movable joint.

Now, as to the result of my use of this splint, I have to say that I have had five cases without a failure. Five cases with a perfect result in each case, so perfect that I doubt the ability of any one of you to determine which limb was broken. Five cases, of course, are not many, but five cases without the slightest deformity is a good record, so far as it goes.

One of them was a case of non-united fracture of several weeks standing. On March 28, 1905, G. C., a boy aged about 13 years, received a fracture of the femur about the middle. He fell into the hands of my neighbor, Dr. L., who put it on a Liston long splint. This proved unsatisfactory and he resorted to weights and pulleys. On April 4 following Grover G. received a very similar fracture of the femur which fell into my hands. I put it up on my own compound splint. It progressed nicely without a hitch and on the 28th day I took it out. The union was perfect, and without so much of a blemish as a provisional callus. As he wished to go to school, as a safeguard, I put a plaster of Paris splint on the outer half of the limb, and fastened it on with adhesive strips. On the thirty-second day after the accident he went to school, on crutches of course. When my neighbor, Dr. L., saw this he came and asked me what I had done with the splint I had used on Grover. I asked him if he had another fracture so soon. He replied that he had a non-united fracture. When I got it down for him he asked me to go

and help put it on, which I did. The poor boy was laying there with both a Liston splint and a set of weights and pulleys on his broken limb. He was reduced to skin and bone and the leg was as limp as if it were fastened on with a string. I put it up very carefully, and it was never opened until union was perfect, which consummation was found to have been reached on the twenty-ninth day after the splint was applied. Even under all these untoward circumstances we got a perfect result. You would now have difficulty in finding which leg was broken.

My work with this splint so far has been extremely satisfactory. The comfort of my patients, which adds who can tell how much to these favorable results, is worthy of your attention. Take a nervous, restless person, a child, for instance, and it is utterly impossible to keep them still enough for bones to unite while they are suffering pain. Then to observe the happy result of your work furnishes you occasion for self-congratulation. Think of it, no limp, no overlap, no shortening, no kick, no grumble, no refusal to pay, no suit for malpractice, no—nothing but showers of blessings.

MAJOR SUBURBAN SURGERY, WITHOUT HOSPITAL OR TRAINED NURSE.

J. Estill Miller, M.D., Pittsfield, Ill.

The theme of this paper was suggested to me by Dr. Howard Kelly, with whom I was talking some time ago, and incidently mentioned an experience similar to those which are to follow. He seemed greatly surprised, and requested me to write it up, so you may blame him for the burden I am placing upon you.

Until recently Pike county has not had the advantage and conveniences of modern hospital facilities, nor have we had trained nurses to help us over the rough places in sickness and surgery. Therefore, our emergency surgery was done at the patient's home, frequently with but little preparation of operating room or patient, and amid the most unhygienic surroundings. The results I have had were at first surprising to me, but as I became more familiar with this work, modifying my technique as the occasion required, I was surprised when I did *not* get good results. I regard the urban surgeon's work as comparatively easy. All the facilities of a great hospital are at his disposal. He does not have the worry of making every preparation himself, even from the smallest detail. He has not the nervous strain of watching every man and woman during the process of preparation to prevent them breaking the technique, nor is he fatigued by a long country drive. His patients are frequently from adjoining towns or country, and if they are able to make the trip they are in good condition for operation.

Notwithstanding all these advantages, there continues a certain percentage of infections in clean cases operated on in the city hospitals. I often wonder if this is not caused by air infection. We know that city air is full of pathogenic organisms which are stirred up from the street by their roller sweepers, and taken up by currents of air. Mr. Lockwood (surgeon to the St. Bartholomew's Hospital) shows that atmospheric bacteria abound most in densely inhabited parts of cities and become fewer in the suburban districts. Dr. M. H. Gordon, in his report to the local government board, found that the air of London, sixty feet above the pavement, contained colon bacilli, and fifteen kinds of staphylococci, streptococci from the mouths and throats of human beings, and also others separated from horse manure. I attribute the wonderful statistics of the Mayos not altogether to their skill—for I have seen many other operators equally dextrous—but to their favorable environment, to their marvelous team work, and to the fact that most of their patients come from a distance. St. Mary's Hospital is situated in the country, one mile from the business part of Rochester, where the air must be very pure. The city surgeon also has an advantage over his country brother in that acutely seriously sick patients who are unable to be moved, and also in whom the operative mortality is greater, usually fall to the lot of the country surgeon, while the patients who are able to be up will frequently go where they can secure hospital facilities.

The ideal condition for operative success is such as exists in a thoroughly equipped hospital in the country or small town. There they are free from the noise of the city, which greatly annoys nervous patients, and they have the quiet and rest which is so essential following serious operations. The pure, wholesome air almost eliminates the danger of air infection.

I hope you will pardon this seeming digression, but the above was written so that you could more fully appreciate the contrast with that which is to follow. In order to understand the difficulties of suburban surgery, it becomes necessary to portray the conditions which maintain in urban surgery.

There are few city surgeons who adequately appreciate the difficulties under which the country surgeon labors. I am sure that if they did they would not look down on us from their pinnacle of fame with the patronizing manner some of them often assume, and they would give more than polite tolerance to the humble experiences we may timidly mention while in conversation with them. This condescension is inexplicable to me. Some country surgeons and physicians have had equal, if not more, advantages than their city brother, and nature may have endowed them with some gray matter and a little dexterity, and they may be obtaining as good, and perhaps better, operative results. The country surgeon does not have as many cases. This affords him the advantage of giving more time to the personal study and diagnosis of his cases. Success in suburban surgery without skilled help depends in a great measure upon the surgeon's ability to attend to every detail, to take infinite pains from the time he enters the home until the operation is over. The least laxity or oversight might result disastrously. The surgeon must form the habit of being Argus-eyed; he must convert himself into a trinity, consisting of trained nurse, skilled assistant, and surgeon. If he relaxes his vigilance, some of his lay assistants are sure to put a dirty thumb over the edge and inside his sterile basin or pans; another may stick a finger into his sterile water, or handle his sterile towels or dressings with unclean hands, or stand over the instrument tray or dressing table, and in many other ways break his technique.

In describing my method of operating in private homes without the usual assistants, I hope you will bear with me when I refer to myself. At the time I receive the call I at once instruct the family to have a good fire in the cook stove, and to put on an ordinary wash boiler full of water, so that it will be boiling by the time I arrive. This serves as a utensil sterilizer, and supplies an abundance of sterile water for cleansing purposes. On arriving at the home I first look the patient over, and decide on the kind of operation to be performed. If he is nervous and excited, I give a hypodermic of morphin and hyoscin. I take my outfit into the kitchen and select two of the most intelligent and handy laymen to wait on me while I am making the preparations, cautioning them in what *not* to do. The family physician is usually present, and renders valuable assistance, but if he is not a young man he must be watched carefully, for he probably has not acquired the aseptic habit. The outfit referred to consists of emergency case, portable sterilizer of Scanland-Morris make, three or four graniteware pans, oval in shape, and made so that one will fit within the other, telescope fashion. I always keep the emergency case packed and ready so that nothing will be overlooked when I receive a hasty call. It contains the instruments, Harrington solution, alcohol, tincture of iodin, drainage tubes, rubber tissues, needles, sterile catgut ligatures, silk-worm gut, and linen; iodoform gauze in aseptic cartons, mask, chloroform and ether, soap, nail brush, adhesive plaster roll, three pairs of gloves, bichlorid tablets, carbolic acid, fountain syringe, bandages, tourniquet, normal saline tablets, forceps for taking utensils from the boiler, and sometimes a Kelly pad. I also keep my sterilizer packed, and bi-sterilized. It contains three gowns, which have mouth covers attached, eight or nine towels, a large jar of sterile gauze sponges, five laparotomy sponges, laparotomy sheet, three caps, nail brushes, also an alcohol stove of large capacity, with folding frame to hold sterilizer. All pans, including those usually strapped under the emergency bag, after being washed, are placed in the wash boiler, also the syringe and gloves are placed in the same boiler. If there is no gasoline stove I start the sterilizer with

the alcohol stove. Then, after the ordinary wash basin has been scrubbed and scalded, I take a preliminary scrub with soap and hot water, changing it several times. I instruct the lay assistants to prepare dining room table, unless I take a portable table with me, which I usually do, for there is nothing so back-breaking as the ordinary dining table used for operation. If it is the extension variety, the leaves are removed, and the patient placed crosswise, with feet resting in a chair. The above assistants remove everybody from the room to be used as operating room, and the floor, whether carpeted or bare, is hastily wiped up with wet cloths. The windows and doors are opened, and fresh air allowed to circulate freely. A stand table or two, if at hand, are brought in, if not obtainable, I use ordinary chair to set sterilizer and instruments on. I next gently scrub the seat of operation, remove sterile towel with sterile forceps, and wring same out of bichlorid solution, and place over seat of operation. The long pans are removed from the boiler, and instruments, needles, drainage tubes, and ligatures placed therein and boiled with other pan inverted over them. Patient is then placed on the table, and the anesthetic started by one of the doctors. I usually let him select the anesthetic with which he is most familiar. The other doctor carefully scrubs up, Harrington solution is poured over his hands and arms, and rubbed in, followed by alcohol. The other pans are removed from the boiler, and gloves placed in one; another is used for bichlorid solution, and a third used for dry sponges. I then have the lay assistant open sterilizer and the doctor hands me the sterilized brush, with which I wash carefully again. Then the gowns, gloves and caps are put on, and the seat of operation gone over slowly with Harrington solution and alcohol, the laparotomy sheet placed over patient, and a couple of towels placed across the body, and the operation proceeds. The sponges and dressings remain in the sterilizer and a few are taken out as required.

This is the method adopted in all cases at private houses, with slight modifications now and then, as circumstances require. I endeavor to do a dry operation, no water or solution used on the patient. The laparotomy sponges only are wrung out of hot sterile salt solution. The wound is dressed with gauze, squeezed nearly dry out of a dark red iodin solution, over which dry sterile gauze is placed. After the operation I usually use a quart of normal salt solution by the rectum (Murphy's method).

I have had 152 major operations at patients' homes, almost all without a trained nurse, and my mortality has been three, all of which were neglected cases of appendicitis with peritonitis. I have had three cases of infection, two of which were stitch-hole abscesses. I will now briefly report a few of my cases from my records:

Willie F., aged 8 years, kicked on the head by a horse, frontal bone fractured. When I saw him a few hours later with his physician, he was unconscious, pulse 68, labored breathing, and occasionally he would claw at the wound. I made hasty preparations, and on opening the wound I found it foul with dry horse manure and dirt from the horse lot. A piece of the frontal bone over two inches in length and an inch wide was driven into the brain, and the membranes were badly lacerated. I removed the large piece of bone and thirteen small pieces. Quite a large quantity of brain substance oozed out. The wound was carefully cleaned, scalp closed, leaving a slight space for drainage, and an antiseptic dressing applied. He regained consciousness in a few hours, and his recovery was uneventful.

Mrs. B., aged 30 years, living in Calhoun county, fifteen miles from my office, mother of six children, youngest six months old. She lived in a log cabin having two rooms, one above the other, with small shed addition which had a dirt floor, and which served as kitchen and dining room. The room I found her in was about 12 by 14, two doors and one window, which was about two feet square. She had been sick about two weeks, first taken with vomiting, and violent pain in the region of the gall-bladder, followed in a few days by chills and a slight fever. A pear-shaped tumor gradually developed in the right hypochondrium, which was movable and tender. No jaundice. Chilly sensations and fever continued, patient rapidly losing strength. Dr. Cromwell of Nebo, who was treating the case, and

I made a diagnosis of obstruction of the cystic duct, and decided something must be done at once to save her life. Imagine the surroundings, source of light, etc., if you can. The husband and one or two of the neighboring women had been nurse, cook and housekeeper. Could worse conditions possibly exist for an abdominal operation? She was unable financially and physically to be moved, so we decided to operate as the only chance. Dr. Wells of Pleasant Hill was sent for to assist. I came prepared to operate, but the nature of the operation was uncertain until I examined the case. While waiting for Dr. Wells I made the preparations above described, which included a short log of wood wrapped in an old quilt, to act as a Lilianthal elevator. On opening the abdomen I found the gall-bladder immensely distended with mucus and pus, and quite a lot of adhesions. On opening it I found several stones, and a large stone was incarcerated in the cystic duct. The walls surrounding it were as thin as paper and seemed ready to give way. I removed this stone, which was seven-eighths of an inch in diameter, and carefully cleaned the gall-bladder, drained through a tube introduced into the cystic duct, and closed the wound. Patient made rapid recovery, healing by first intention.

Albert B., aged 32 years, had had a large inguinal hernia since childhood, truss only partially retaining it. It would come down at times and he would reduce it himself. On the morning of January 21 he slipped on the ice, and it came down larger than ever and resisted all his efforts at reduction. Late in the afternoon he called his family physician, Dr. Swartz of Summer Hill, Ill., who, after several hours' work, decided the hernia was strangulated and 'phoned me to come prepared for immediate operation. It was 10 p. m., and the patient lived seven miles from my office. We had a January thaw a few days previous, and the roads were again frozen and rough, the ruts were deep and the night very dark. I arrived at the bedside at 11:30 p. m., and found the patient with a rupture nearly as large as a child's head. The skin around the penis and scrotum was turning dark and the tumor was tense and painful. The house was an old one, a half story rock structure, into which they had just moved, and had not had time to clean up. The furniture was piled around the only two lower rooms, cobwebs on the walls, and the surroundings far from hygienic. A cook stove had been set up in the room assigned as kitchen and dining room; the only available light was from two small coal-oil lamps. You could scarcely picture more unfavorable environments for a major operation. I went to work, and in one hour and a half was ready for the operation. The patient was placed on a wide sectional dining table. Dr. Gay of Summer Hill gave the anesthetic; Dr. Swartz assisted me. The lights were held by two neighbors. I relieved the constriction at the neck, and removed about two feet of intestine from the sack. The intestine was distended, and almost black in color. Towels were wrung from hot normal salt solution, and placed over them, changing every few minutes. Finally they began to turn from dark to pink, and in a short time were returned to the abdomen. The sack was very adherent, and the muscles adjacent to the hernial opening attenuated from pressure. Closure was made by overlapping and quilting with kangaroo tendon. Perfect recovery without infection, and no tendency to recurrence.

Miss W., aged 20 years, was suddenly taken with typical symptoms of severe attack of appendicitis. I advised immediate operation, which I performed at her home at midnight, assisted by Drs. Shastid and Doss of Pittsfield. Two women held coal oil lamps, which were the only source of light. A gangrenous appendix was removed. Recovery was uneventful; no infection.

Miss M., aged 27 years, acute appendicitis. The patient lived ten miles from my office. I was called by Dr. Cromwell of Nebo at 11 p. m. The surroundings were about similar to those in the preceding case. Operation was performed at 2 a. m. Two coal-oil lamps held by neighbor women furnished the light. Dr. Pollock, also of Nebo, administered the anesthetic. Appendix was post cecal, and you can imagine the difficulties encountered during its removal. The scant light and strong adhesions made the dissection especially trying. Recovery followed without infection.

Mrs. G., aged 30 years; floating kidney; three months pregnant; operated on at her home, with the assistance of Drs. Smith and Doss of Pittsfield. The kidney was delivered in the usual way. A strip of capsule, one inch wide and extending almost the length of the kidney, was reflected from the convex surface, and sewed in the superior angle of the wound to act as suspensory ligament. The remainder of the operation was completed by Edebohls' method. Recovery uneventful; no infection. An eight-pound boy was delivered six months later.

Mr. H., aged 68 years, had suffered for a number of years with discharge from left ear. The ossicles had been removed several years previous. He gave the following history: For several days he had been suffering with an intense headache, situated in the left side of the head, fever, vomiting, and chills. I found on examination tenderness over the left mastoid process, temperature 103½, some delirium, and that the ear which had formerly been discharging had recently ceased. I advised an immediate operation for mastoid disease. With the assistance of Dr. Bechdoldt the mastoid process was opened, the bone found eburnated and thickened. The antrum was finally opened and some pus and cheesy matter was removed with curette. A strip of iodoform gauze was then used, and the patient returned to bed. Recovery was uninterrupted.

The next and last case I wish to report is only partially covered by the subject of this paper, as we had a trained nurse, but no hospital. It proved so interesting to me that I have brought the patient along for your inspection. You can see that he is a man of 68 years, an old soldier. He had been afflicted since childhood with an unsightly angioma of the lower lip, which continued to grow gradually until at the time of removal it was as large as the fist. When he would stoop over it would almost double in size. The tumor involved the left cheek to the angle of the jaw, and encroached on the lumen of the mouth to such an extent that teeth had to be extracted. Still the gums covering the alveolar processes would pinch the tumor while chewing. This constant irritation finally resulted in epitheliomatous degeneration of the labial portion of the growth. This large ulcer caused him great pain, requiring two or three grains of morphin daily to produce relief. Finally he sought relief in surgery. In St. Louis he was refused operation, saying he would almost surely bleed to death. He went to Jacksonville, and was again discouraged. He returned home greatly depressed, had lost over thirty pounds in weight, and was suffering continuously. In this pitiable condition he consulted me and begged for relief. I examined the growth carefully. It was fed by a large number of great blood-vessels, and I told him I would think it over and requested him to return in a few days. He returned at the appointed time, and I explained the danger of operation. He said he would take all chances if there was any hope of relief. There was no place to take him for operation, but I finally secured a small room on the third floor of a hotel and employed a nurse to take care of him. This room was cleaned and put in readiness for the operation. My fellow townsmen, Drs. Shastid and Smith, kindly assisted me in the operation, and Dr. Lacy administered the anesthetic.

I first attempted to remove it by tying the vessels as they were cut. An incision was made from the right corner of the mouth down to the angle of the chin, then approaching the growth across the lower border of the chin, but the vessels were so large and numerous in the region of the growth that I had to abandon the method. I then made an incision over the carotid artery, low in the neck, its sheath was opened, and a ligature passed around the vessel. As I did not have Crile's clamp, I selected an elastic hemostat, put rubber tubing on same, and made traction on the ligature, which separated the vessel from its neighbors, and gently applied the clamp, closing it just enough to stop the circulation. This gave me an almost bloodless field in removing the tumor. Each vessel was securely tied, a portion of the left cheek removed, going just below the salivary duct. A slight band of healthy mucous membrane was left at the lower border of the gums with which to line the new lip. After the growth was removed, a collar incision was made about two and one-half inches below the lower border of the wound. This collar was dissected loose from underlying tissues, and left attached at both ends, making a sling. The head was bent forward and the sling placed

over the chin and attached by two silkworm-gut sutures to periosteum, and the mucous membrane sewed to the upper border to form the new lip. The angle of the mouth was closed, the suture line extending backward to close opening in cheek. The space from which the sling was removed was now closed by drawing the loose skin of the neck upward.

The operation being completed, I released the carotid, leaving the ligature around it, but untied. The artery, which was atheromatous, had been clamped about two hours, and in a man of his age I felt greatly concerned as to the condition of the brain and intima. After the clamp was removed the vessel remained white for some time, and I began to feel doubtful as to the circulation being restored, but it pinked up, and the face assumed its normal color. The wound was closed except at a point where the end of the ligature came through. The nurse was then instructed to tie it at once should the ligatures on the vessels in the wound fail to hold and active hemorrhage set up from straining at vomiting or other causes. There was no hemorrhage, and the ligature was removed from around the carotid twenty-four hours later. Convalescence was uneventful, except during the first four days and nights he had a most persistent attack of hiccough.

Some of the city surgeons would lead us to believe that clean, successful major surgery could not be done in patient's home, except at imminent danger to life. I am convinced that this is not true; that while hospital trained nurses and assistants are great conveniences, yet they are not absolutely essential for good work and good results. It is not the purpose of this paper to inveigh against hospitals and trained assistants, for I now have these conveniences myself, and I find that I can do my work much easier and without the fatigue and worry incident to private home work.

TRAUMATISM AS A FACTOR IN THE PRODUCTION OF INSANITY.

R. T. Hinton, M.D., Jacksonville, Ill.

There is no one cause for insanity. Investigators recognize the importance of both predisposing and exciting causes, and classify trauma as a cause belonging to the former group. A few, however, have recognized a psychosis resulting directly from an injury, considering the same to be a post-traumatic dementia. It may be stated, however, that trauma is a predisposing factor, contributing its part in the production of the psychosis by interfering or preventing the brain from asserting its normal recuperative or resistive properties.

In considering the relation between injuries of the brain and insanity, I wish to exclude the following groups of cases: 1. Intrauterine or parturition injuries resulting in the defective development of the individual. 2. Post-traumatic deliria, either transitory or followed by death from exhaustion. 3. Cases in which the injury sustained was merely a coincidence and was not really a causative factor in the production of the psychosis. 4. Post-traumatic epilepsy. 5. Psychoses following operations. 6. Traumatic hypochondriasis.

While my subject includes injuries as a cause of insanity, I shall limit my discussion for the most part to injuries of the head, referring but briefly to other injuries later. There are two mechanisms by which the cerebral cortex may be severely injured. 1. The direct, a blow upon the vault or striking the head against an unyielding substance. This is the more common cause. 2. The indirect, the force being transmitted through the spine.

The severity of the injury done to the brain necessarily depends on the condition of the individual, and the nature and direction of the force. Minor injuries, especially if the object through which the force is applied is of a yielding nature, usually result in a concussion of the brain. It is for the most part characterized by a transitory loss of consciousness, but in all probability its pathology simulates to a greater or less extent that of the changes produced by a contusion. A few investigators state that this condition belongs more to the contusions and refuse to recognize any other classification.

The changes following a cerebral contusion necessarily vary from the minute to the gross. In the milder form of injury, examination on section may show minute rents in the brain substance with perhaps very small hemorrhages. The

changes in the severer forms are for the most part similar and vary only in degree. The lacerations proper of the brain tissue may be invisible but section will usually show hemorrhages of various size. In the cases in which death ensues the injury may be quite evident to the naked eye, with hemorrhages which may be cerebral proper, subdural or extradural. Post-mortem examination frequently shows the injury of the brain tissue to be opposite the point of contact of the external force. Instead of being localized the change in the cerebral cortex may be diffuse.

The pathologic changes which have just been enumerated are the ones which immediately follow the trauma sustained by the brain, and while there may be resulting physical and psychical symptoms at the time the process must be extended to explain the resulting psychical conditions which we are considering. If the hemorrhage is of considerable severity there is an increase of intracranial pressure, and sooner or later a congestion results. As a result of this congestion, definite and well known pathologic changes ensue, namely, exudation and edema. If the increased pressure continues to exist an anemia results, this being explained by the reduction of the calibre of the blood-vessels as a result of the increased cerebral tension. If the gray matter of the cortex is severely injured the repair is slow, as the lacerations which follow are more or less permanent gaps and are bridged over later by fibrous tissue. This process of repair may seriously interfere with the cerebral circulation and permanent disturbances consequent upon this condition ensue. Punctured wounds with resulting cerebral changes are localized and the pathology is not at all dissimilar to that already mentioned. If there is a distinct loss of brain tissue the changes which result vary in degree. The histology, which has been found to consist of minute hemorrhages and thrombi, cellular infiltration of the vascular walls, lymph spaces, etc., is not essentially characteristic and will not be discussed here.

These, then, in brief, are the most important pathologic changes following cerebral traumatism. The processes which develop from or which follow a continuation of the edema and exudation mentioned above are familiar and will not be considered farther. This pathology is not characteristic, and, as will be seen later, similar conditions are found in other forms of mental disease. While these changes may be sufficient to explain the psychic phenomena which develop, it has not been found that they are distinctive and characteristic of a specific form of mental aberration.

The pathologic changes which have been found in the different forms of mental disease do not differ essentially from those already mentioned. There is no distinctive pathology, but there is not infrequently found in the organic cases degenerative changes in the cortical cells, a decrease in the number of cells, and an increase in the amount of neuroglia tissue. Degenerative processes not infrequently involve the blood vessels. Gross examination of the brain usually shows dense adhesions between the membranes and the cortex, cerebral atrophy varying in degree, an increase of fluid, adhesions at the base of the brain, etc.

If we consider the symptoms which may develop after or follow brain trauma we find that while they are not essentially characteristic their importance cannot be overlooked. The same group of symptoms may be found in the different forms of mental aberration. Two groups of cases must necessarily be considered. In the first group, or those which immediately follow the injury, are found the usual symptoms of shock, vertigo, delirium varying in degree, partial or complete amentia, mental confusion, coma, etc. This class of cases is excluded because the duration is usually short, they terminate in rapid recovery or death from exhaustion, and are not directly associated with the development of a psychosis later. If a psychosis develops later certain well pronounced symptoms must be considered.

Prodromal symptoms are necessarily variable. There may be noticed a change of character, unusual irritability, restlessness, insomnia, apathy, headache, vertigo, changes in the physical condition of the patient, etc. The duration of this period is variable, one case of twenty-three months' duration having been reported.

Confusion varies in degree. The clouding of consciousness may be partial or complete. External impressions may not be comprehended, even intense stimuli may not be understood. Orientation in any one of the spheres may be partially or completely lost. Associated with this condition are usually lack of attention and distractibility. Orientation may be good, but the ability to understand requests, demands, and simple orders may be lost. The processes of this disturbance are necessarily very complicated.

Memory defects depend on the extent of the injury and the condition of the individual at the time of the injury. Disturbances are characterized chiefly by inability to recall former knowledge and important events. Especially is this true as regards the circumstances occurring at about the time of the accident. The absence of impressibility, on which memory depends to a great exent, is explained by the partial or complete clouding of consciousness which was present. Accuracy of memory is especially defective.

Hallucinations may involve any of the special senses. They may be fleeting and transitory or have a permanent character. Hallucinations of sight are especially common. Those of hearing are very frequent and vary from simple sounds to complicated words and sentences. Their development may be peripheral, but for the most part are of a central origin. Illusions or false perceptions are perhaps more common than hallucinations. At times it may be difficult to distinguish one from the other.

The delusions which are usually presented are variable in character. They may be depressing or exhilarating. Their character for the most part depends on their mode of origin. They may be fixed and systematized or unsystematized and vacillating, being usually brief in duration and changing in character. They do not originate in experience, are not based on facts, and are inaccessible to argument. Many of them center in self.

Disturbances of the rapidity of thought and the formation of ideas and concepts may be more or less pronounced. At times there is retardation, again a flight of ideas. Judgment and the power to reason correctly are usually very much diminished. The capacity for mental work as a rule is decreased.

Dementia following traumatism depends on the nature and severity of the causative agent, the age of the individual, the use of alcoholics and the loss of brain tissue. In several of our cases in which trauma is considered the factor in the production of the mental condition, other conditions have been found to be equally important. The degree of mental deterioration will be found to vary. If the individual is not of advanced years the course may simulate paresis. Especially is this true as regards the physical findings and memory defects characteristic of the disease. If the patient is older the picture is usually that of senile dementia. Physically there may be noticed a general tremor, speech disturbances, an increase of the reflexes and an ataxia, partial or complete. The pupils may be dilated, contracted and unequal. They usually respond sluggishly to light and accommodation. In fact, all the symptoms simulate a general paralysis. In this connection it must also be mentioned that following trauma many cases develop an intolerance for alcohol. Just why this occurs has not been fully explained, unless it is that as a result of the trauma certain changes have been produced in the nervous system which makes it very susceptible to various forms of stimuli.

Of the cases admitted to the Illinois Central Hospital for the Insane during the past two years in which traumatism is a factor or is given as an assigned cause, twenty-eight were males and four were females. These figures, it must be understood, are not accurate, but are taken from the court papers which accompany the patient at the time of his admission. Friends and relatives of patients can usually recall an injury received by the patient, and which to them is sufficient to explain the cause of their present condition. Most of us can remember of having received a head injury at some time during our lives. In a few cases this history is perhaps important, but in the majority of cases bears but little relation to the development of the psychosis. Again, for want of a better cause, traumatism is not infrequently given as the assigned cause by the physician on

the jury or by the members of the commission who decide as to the sanity or insanity of the individual. However, as a working basis, the figures given above will have to suffice. Classifying these cases we find a fairly wide variation, though certain groups predominate:

Dementia præcox	10
Paresis	6
Epilepsy	4
Senile dementia	3
Degenerates	1
Not insane, one being a case of hysteria	2
Chronic alcoholism	1
Alcoholic hallucinosis	2
High grade imbeciles	2
Dementia following and due to localized brain injury	1

Of these thirty-two cases traumatism is given as the sole cause in eighteen of them, in the remainder other causes are also assigned. These cases will be considered more in detail, because it cannot be denied that in some of them traumatism bore a certain relationship to the development of the psychosis, and seemed to be more than a mere coincidence. Analyzing these cases again we find that certain groups predominate:

Dementia præcox	4
Paresis	3
Epilepsy	3
Degenerates	1
Senile dementia	2
Chronic alcoholism	1
Alcoholic hallucinosis	1
High grade imbeciles	1
Dementia following localized brain injury	1
Not insane—hysteria	1

That the majority of these cases belong to the dementia præcox and paresis groups can be explained, I believe, by the statement that these two groups constitute a large per cent. of the cases admitted to the insane hospitals. It will be noticed that none of these cases belong to the true paranoias or to the manic depressive groups. The total number of admissions and readmissions to the hospital during this period of time was 1031.

Considering the groups mentioned above more in detail we find that there is but little to support the claim that trauma was the exciting cause in the production of the psychosis. Practically all of the cases of dementia præcox were typical in character and were characterized by more or less profound mental deterioration. In the majority of cases the injury supposed to have been the active agent in the production of the psychosis was received some considerable time previous to its development, often years before. In none of the cases was there any physical evidence in the form of scars, depressions, focal symptoms, etc. Considering the fact that so many causes operate in the production of this psychosis, we are unable to demonstrate or to determine the presence of previous trauma, or to consider the same to be more than possibly a remote contributory cause. For the most part these cases seemed to simulate other cases which are admitted almost daily.

The relation of traumatism to paresis is an interesting subject. Some investigators are inclined to the belief that paresis follows an injury. Others give it but little consideration as an etiologic factor. If the symptoms are first noticed after an accident it is but natural to attribute the cause and subsequent course to this factor. It must be borne in mind, however, that paresis is a slow and progressive disease, and that while the symptoms have apparently developed suddenly, the process has unquestionably existed for some time. This is easily explained when the pathology of the disease is considered. It is characterized essentially by a

gradual degenerative process which involves the cerebral tissue. It is not reasonable to suppose that a condition which is characterized by certain definite and more or less positive physical signs will develop immediately after an accident, but rather that if the condition does develop the injury acted as an exciting cause upon a process which had been gradually developing before. In one of our cases positive physical signs, with incomplete mental symptoms, followed a head injury almost immediately. The patient was intoxicated at the time of the injury, and later a specific history was obtained.

The same relationship was found to exist in the senile and in the alcoholic cases. While the injury was given as the sole cause it was again found that other factors were so pronounced that it could be merely considered a contributary cause. In the one case of localized brain injury the dementia developed soon after the receipt of the injury. Associated with this factor, however, are usually others to be considered, namely, arteriosclerosis and alcoholism. These cases are usually permanent in character.

Injuries received in other portions of the body do not bear as close a relationship to the production of a psychosis as do injuries to the head. Injuries to the central nervous system received indirectly through the spine have already been considered briefly. This cause obviously does not operate as frequently nor as forcibly as do direct injuries to the head. In this class, as in those already considered, a number of predisposing agents play a rôle in the production of the mental condition. Associated with alcoholism, arteriosclerosis, and metallic poisoning must be considered the previous mental condition, perhaps his inferiority, and the environment of the patient. If the injury involves the trunk or the limb it is reasonable to suppose that this agent is a less important factor. The anxiety and worry therefrom may cause a disturbance in the equilibrium of a nervous system which is already below normal from whatever cause. The injury itself, however, cannot be considered as a direct exciting cause, it is only an indirect cause with later manifestations.

I wish to present a brief report of a few cases which have been recently admitted to the Illinois Central Hospital for the Insane, cases in which the relation of the trauma to the development of the psychosis cannot be entirely overlooked. In these cases it will be noticed that the time intervening between the trauma and the development of the insanity varies and that other factors must of necessity be considered as well.

Case 1.—J. H. A., carpenter, aged 39 years. General health good until the time of the accident. Has used alcohol to excess. While intoxicated patient was thrown from a buggy. His head struck a tree, resulting in a fracture of the lower jaw, scalp wounds and cerebral contusion. Following the injury he was unconscious for some time. Later he became restless, worried about his condition and was inclined to be disturbed. There were insomnia and pronounced speech disturbance.

On admission to the hospital it was found that there was practically a complete loss of orientation; he was very stupid; his speech very much disturbed. There was a marked tendency on the part of the patient to repeat parts of words and sentences said to him. Patient was very careless in his habits and very untidy as regards his personal appearance. Memory was very defective.

Physically there were evidences of recent trauma as explained above. The left pupil was about twice the size of the right, both reacting very sluggishly. The deep reflexes were exaggerated; a tremor was fairly well pronounced and there was a well marked motor aphasia. In fact the mental and physical symptoms simulated that of a general paralysis. In many respects this patient has improved, but his physical signs, speech disturbances and memory defects still persist.

Case 2.—H. W., farmer, aged 54 years. One parental cousin was insane and a sister was afflicted with melancholia. Patient had an attack of melancholia seventeen years previous to his admission to the hospital. Recovery was evidently complete. During a quarrel three months previous to his admission the patient was struck with the blade of a pocket knife. The blade penetrated about two inches in the left temporal region. Eighteen hours after the injury the skull was trephined, blood clots being removed. Drainage was employed

for two weeks. A hemiplegia developed on the right side, but later this condition practically subsided. Two weeks before his admission patient began to show a marked change in his disposition, becoming quite emotional and irritable. Motor aphasia was also pronounced. He had no delusions or hallucinations. Was inclined to be careless about his habits.

Physically the patient seemed to be fairly well developed and nourished. The arteries were slightly thickened. His gait was inclind to be staggering at times. His coordination was poor and there was a tremor of the extended fingers. The deep reflexes were very sluggish, and the pupils responded to light and accommodation sluggishly. There was also a well pronounced motor and sensory aphasia.

Mentally patient was very much deteriorated. There was a loss of orientation as regards time, place and person. His perceptions were dulled and there was a loss of memory for both past and recent events. There were no hallucinations nor delusions. Patient's mental condition seemed to be that of a dementia with a well marked organic basis due to the traumatism which he had sustained.

Case 3.—A. M. L., a carpenter, aged 36 years. Family history negative. Patient formerly drank to excess. Two years ago patient fell from a scaffold, injuring his head. He was unconscious for fifteen minutes following the injury. Present mental condition was first noticed one year ago. The onset was characterized by forgetfulness and repetition. Later he became moody and depressed. Depression, irritability and delusions were the most prominent mental symptoms previous to his admission to the hospital. His delusions, for the most part, were those of persecution.

Physically the patient was fairly well developed and nourished. Coordination was fairly good, there was a tremor about the mouth when talking. The knee-jerks were absent. The right pupil was larger than the left, and there was practically no reaction of the pupils to light.

Mentally the patient was fairly well-orientated. There was some confusion, and for the most part patient seemed to be somewhat depressed. He had some hallucinations of hearing, but no pronounced delusions. Memory for both past and present events seemed to be fairly good. Later patient began to fail physically and to deteriorate very much mentally; developed delusions fantastic and grandiose in character. He talks to himself almost constantly and is very careless about his personal appearance and habits. The entire picture has been that of a general paralysis.

Case 4.—O. E., farm hand, aged 26 years. His physical health has been poor. A wagon ran over patient's head four years ago. The first mental change noticed followed an attack of typhoid fever, but the injury mentioned above is given as the assigned cause. Insomnia and irritability have been the most prominent symptoms.

On physical examination patient was found to be fairly well developed and nourished. The left lobe of the thyroid seemed to be slightly enlarged. Patient complained of pain and numbness on the right side of the head, especially in the occipital region. Tendency to dermographia very well pronounced. Coordination poor. Tremor of extended fingers and tongue. The knee-jerks were brisk.

Mentally the patient was well orientated, and he could give a fairly adequate account of his condition previous to his admission to the hospital. No delusions or hallucinations present, other than the subjective symptoms mentioned above. A few mannerisms have been noted. Patient is deteriorated mentally and belongs to the dementia præcox group.

CONCLUSIONS.

1. Traumatism is a predisposing and not an exciting cause of mental disorders. Other contributory causes are usually present.

2. The cerebral cortex may be injured by direct or indirect violence, the former being the more common way.

3. The pathology of cerebral trauma, either recent or remote, is not characteristic of any one form of mental disease. Similar changes are frequently noted in different forms of insanity.

4. Symptoms which at times follow cerebral traumatism are not essentially characteristic, but their importance cannot be overlooked.

5. Causes assigned by court papers are not accurate for obvious reasons.

6. Traumatism was given as an assigned cause in approximately 1.7 per cent. of our cases. The analysis of most of these cases shows that traumatism was not the real exciting cause.

7. If paresis follows an accident it usually is the result of a cause acting upon a process which has existed for some time.

8. Organic dementias are permanent in character. Other factors usually contribute to their production.

9. Injuries sustained in other parts of the body do not bear as important relation in the production of a psychosis as do injuries of the head.

CONTINUATION OF DISCUSSION ON EXOPHTHALMIC GOITER.

Dr. Ferguson (closing the discussion):—I think it would be a good thing if we could find out the toxicity of the blood before operating on the extreme cases. I have done something in that direction, but not enough. I would like some one else (or several for that matter) to take up this phase of the subject and find out the toxicity of the blood with a view to determining whether these cases can be operated on with impunity or not.

Another thing which has impressed me is the use of simple drainage. In 1889 a surgeon of London, England, treated cases of goiter with the use of silver tubes. He would insert three or four of these small trocar and cannula tubes into the neck. He got good results in cases of cystic goiter, and also obtained some benefit from the drainage in the cases of the exophthalmic type. Of course, we do not countenance to-day the injection treatment in cases of exophthalmic goiter, but still good results, according to reports in the literature, have been obtained from this method of treatment. It has occurred to me that if one put a large seton from pole to pole on each side of the neck, under local anesthesia, in cases where the acuteness of the disease does not ease up, a great deal of good might be accomplished. We know that it is always best not to operate during the acute stage. In many of these cases the acute storm continues until the patient dies unless something is done. Some of these patients get better by operation. Of course, we must try and overcome the aggravation of the disease before operating, if possible. The vast majority of such cases will die by a thyroidectomy, while a minimum operation may do some good.

With regard to the use of chloretone, I am sure that Dr. O'Byrne could take 15 grains of this drug, three times a day, and it would not inconvenience him in the least. I do not think it would put him to sleep. A dog can take more than 50 grains. This large dosage has not been jumped at, but we have led up to it by degrees. We have found out the amount required. In this connection I wish to mention a mistake in connection with the use of chloretone. One of my interns made the mistake of giving a child, aged nine months, forty grains of chloretone. After having been informed of what had happened, I hurried to the hospital, and found the child, although a little blue, to be in no serious danger. In less than half an hour thereafter I operated on it for cleft palate, and it made a perfect recovery. In view of that fact, Dr. O'Byrne need not hesitate to take this large dose. Chloretone has the effect of lessening oxidation, and a patient with exophthalmic goiter has too much oxidation going on. Chloretone is a safe agent to give in these cases.

NEWS OF THE STATE

PERSONAL.

Dr. Jacob Huber, Pana, is reported to be seriously ill.

Dr. Emma B. Standley, Alexis, is taking a trip to the Orient.

Dr. Harry G. Hill and family, Streator, leave January 15 for Europe.

Dr. Thomas M. Aderhold, Ziegler, has decided to locate in El Reno, Okla.

Dr. and Mrs. Jacob Frank, Chicago, have sailed for Europe and the Orient.

Dr. and Mrs. Harry C. Hill and family, Streator, have started for Europe.

Dr. Henry D. Shonts is critically ill with pneumonia at his home, Chicago.

Dr. Richard H. Street has been appointed fleet surgeon of the Chicago Yacht Club.

Dr. M. William Fitzpatrick, Decatur, has been elected physician of Mason county.

Dr. Ora L. Pelton, Jr., Elgin, will return from Europe about the middle of February.

Dr. Ira O. Paul, Winnebago, was thrown from his sleigh, December 24, fracturing his left hip.

Dr. Joseph DeSilva, Rock Island, has been appointed a commissioner for the Joliet Penitentiary.

Dr. Myer Nuta, Chicago, was operated on for double hernia by Dr. Thomas Jonnesco, December 22.

Dr. Rachel Watkins has been appointed temporarily assistant physician to the Peoria State Hospital.

Dr. George L. Eyester, Rock Island, who has been under treatment in Chicago, has entirely recovered.

Dr. V. H. Podstata has resigned as superintendent of the Northern Illinois Insane Hospital at Elgin.

Dr. W. P. Short, Mason City, 92 years old, is reported to be seriously ill at St. Clara's Hospital, Lincoln.

Dr. Robert C. Bourland has been appointed district medical examiner by the civil service board, Rockford.

Dr. William M. Richards, Joliet, was operated on for appendicitis at Silver Cross Hospital, December 24.

The office building of Dr. William W. Houston, Good Hope, was seriously damaged by fire, January 10.

Dr. J. T. Black, one of the staff of the Illinois Asylum for Feeble-Minded Children, Lincoln, has resigned.

Dr. Carl G. S. Rydin has resigned from his position in the Kankakee State Hospital, to take effect February 1.

Dr. Eli V. Rice, Chenoa, who has been seriously ill with inflammatory rheumatism, is reported to be convalescent.

Dr. Martin Saucerman, Rock Grove, has left Freeport Hospital, where he has been a patient for the past six weeks.

Dr. Frank B. Earle, Chicago, has been elected a surgeon of the local organization of the Society of Colonial Wars.

Dr. George H. Brannon, Manhattan, who was recently operated on in St. Joseph's Hospital, Joliet, has returned home.

Dr. Francis E. Melugin, Thomson, was operated on recently at Mercy Hospital, Clinton, for disease of the gall-bladder.

Dr. Eleazer A. LaMothe has been elected professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.

Dr. Thomas F. Doyle, Chicago, was seriously burned on the head and face by a gas explosion in his bath room, December 19.

Dr. John F. Taylor, Buda, has been obliged to give up practice on account of ill health, and will soon leave for Montana.

Dr. Eugene S. Talbot, Chicago, has been appointed a corresponding member of the Budapest Royal Society of Physicians.

Dr. George H. Brannon, Manhattan, has recovered from his recent operation at St. Joseph Hospital, Joliet, and returned home.

Dr. and Mrs. Walter Ryan, Springfield, have left for the East, and will sail in June for Europe, where they expect to remain a year.

Dr. Percy C. Hoffmann, Jacksonville, was accidentally shot through the right foot, January 3, while hunting, the injury necessitating amputation.

Dr. Effie Current, formerly of Danville, who went to Colorado for her health, has taken up professional work in a tuberculosis sanatorium in Brush.

Dr. John A. Cavanaugh has been appointed professor of otology, rhinology and laryngology in the Chicago Eye, Ear, Nose and Throat College.

Dr. John A. Cavanaugh, Chicago, has been elected Professor of Otology, Rhinology and Laryngology in the Chicago Eye, Ear, Nose and Throat College.

Dr. Benjamin E. Gleeson, Danville, has been appointed local oculist and aurist to the Illinois Traction System and the Chicago and Eastern Illinois Railway.

Dr. Warren E. Taylor, superintendent of the Watertown State Hospital, is said to have resigned, and Dr. William A. Crooks to have been named acting superintendent.

Dr. Emil Lofgren has been elected president, Dr. Don A. Vanderhoof, vice-president, and Dr. George R. Gill, secretary-treasurer, of the staff of St. Anthony's Hospital, Rockford.

Drs. George W. Mitchell and J. G. Oosterbeck, assistant physicians at the Bartonville State Hospital, have resigned as the result of action taken by the Illinois Civil Service Commission.

NEWS ITEMS.

—The Whiteside Public Hospital, Sterling, is completed and ready to receive patients.

—The net receipts of the annual charity ball in Chicago amounted to $29,000, which is to be distributed among twelve institutions.

—At a benefit given January 13, at the Illinois Theater for the endowment of a bed at St. Joseph's Hospital, $1,500 was netted.

—A fire, December 19, at the Watertown State Hospital, totally destroyed the amusement hall of that institution, causing a loss of about $10,000. No casualties to patients resulted.

—The physicians of Cuba have formed an organization and elected Dr. David S. Ray, president, and Dr. Veda C. Murphy, secretary. All the practitioners of the city have enrolled as members.

—In the December Bulletin of the Illinois State Board of Health the secretary, Dr. James A. Egan, makes a strong plea for the establishment of a state sanatorium for tuberculosis.

—County secretaries are requested when reporting election of officers to give the *address* of each officer elected. Of course, all reports and articles for publication to be furnished *typewritten* and *double spaced*.

—The trustees of the Illinois Western Hospital for the Insane, Watertown, met December 30, and made their final reports and arranged details for turning the hospital over to the State Board of Administration.

—The death rate for Chicago in 1909 was 14 per 1,000 inhabitants, the fourth lowest in the history of the city, and the lowest of any American city having 300,000 population, except Cleveland, which had a rate of 13.11.

—A gift is said to have been made to the Iroquois Memorial Association, sufficient to complete the building fund for the hospital to be erected at 87 Market street, Chicago, which is to cost between $50,000 and $75,000.

—The Chicago Odontographic Society gave an elaborate banquet January 29, in the gold room of the Congress Hotel, in honor of Dr. Greene V. Black, M.D., D.D.S., Sc.D., LL.D., Dean of Northwestern University Dental School.

Dr. E. I. Whitehead, of Victoria, Ill., and family are spending the winter at East Las Vegas, N. M. Dr. Whitehead expects to locate somewhere in the Southwest in the spring. Dr. Whitehead has sold his practice to Dr. H. E. Opre, of Chicago.

—There are vacancies in the positions of assistant physician in practically all the state institutions because of additions to the staff made by the present Board of Administration. Notice of examination for these positions appears in our advertising pages.

—By the will of the late Thomas Murdock, Chicago, who died Christmas Day, one-third of $2,500,000 is devised to the Presbyterian Hospital, to be used for an endowment fund, to be known as the Jane Murdock Memorial Fund, in memory of the sister of the donor.

—Certain dealers in malt and brewery slops advertised in the country papers that the Chicago department of health now permitted the feeding of wet malt to dairy cattle. But the farmers found that they were buncoed again when the inspectors discovered them using the malt.

—The Cook County budget for the fiscal year 1910 shows an increase of $307,829.41 as compared with the appropriation of the previous year. The new Oak Forest Infirmary is to receive $111,309.42, the Dunning Institutions $389,622.76, and the Cook County Hospital $173,500.70.

—Dr. Caroline Hedger, at a meeting of the Chicago Association of Day Nurseries, January 13, launched a movement to place all public nurseries in Illinois under the state law, the proposed law following in the general lines of the law at present in force in New York State.

—The last quarterly bulletin of the Illinois Board of Charities gives the following as the net cost per capita of maintaining each of the state hospitals for the year: Chester, $44.69; Kankakee, $38.23; Peoria, $37.75; Anna, $37.54; Jacksonville, $34.15; Elgin, $33.88, and Watertown, $31.97.

—The new tuberculosis hospital on the grounds of Cook County Hospital is overcrowded with patients. Several have had to be turned away and sent to the Dunning Hospital, and twenty tuberculosis patients have been placed in another department of the hospital on account of the overcrowded condition.

—The State Board of Administration, on January 4, ordered the discharge of Dr. George W. Mitchell, the first assistant physician, and Dr. J. G. Oosterbeck, second assistant physician of the Peoria State Hospital, who were charged with negligence in the performance of duty, and who failed to respond to the request of the state civil service commission for their resignation.

—A medical science room in the Evanston Public Library has been established by friends of Dr. Edward H. Webster, in his honor. The room will contain the Christopher Library, the Brayton Collection, and the new endowment provides $3,000 for the support of a library on general medicine, and not less than $1,500, the income of which is to be used in the maintenance of the room.

—Investigation by Chicago physicians disclosed the fact that many druggists continue to charge high prices for diphtheria antitoxin in spite of the agreement of the Retail Druggists' Association with the department of health to sell at lower prices. Physicians who have the financial interest of their patients at heart can readily secure the lower-priced antitoxin introduced by the McCormick Memorial Institute.

—The president of the Board of Commissioners of Cook County has appointed a committee of six, consisting of Dr. William L. Baum, the warden of the County Hospital, the county attorney and three county commissioners to meet a similar committee appointed by the city council, consisting of Drs. William A. Evans and Heman Spalding, the corporation counsel and three aldermen, to discuss ways and means of turning over the county hospital to city control.

—Under the new board of administration of charities, the following superintendents of charitable institutions have been reappointed: Dr. Vaclav H. Podstata, Elgin State Hospital; Dr. Frank P. Norbury, Kankakee State Hospital; Dr. Henry B. Carriel, Jacksonville State Hospital; Dr. William L. Athon, Anna State Hospital; Dr. Warren E. Taylor, Watertown State Hospital; Dr. George A. Zeller, Peoria State Hospital; Dr. C. P. Henderson, Chester State Hospital, and Dr. Harry G. Hardt, Lincoln School and Colony.

—The governor on December 31 reappointed Drs. Frank Billings, Chicago, and John T. McAnally, Carbondale, Rev. Emil G. Hirsch, Chicago, and John D. Harris, Champaign, members of the State Board of Charities, as the new State Charities Commission. At the first meeting of the commission, held January 8, Dr. Frank Billings, Chicago, was elected president, and Mr. William C. Graves, secretary of the old commission, was appointed executive secretary. The secretary was instructed to map out a plan whereby the work of the commission may reach not only the seventeen state charitable institutions, but also every county poor house and jail in the state.

—The president of the Board of Commissioners of Cook County, in his annual message, notes an increase of 31 per cent. in the admissions to Cook County Hospital between 1903 and 1908, and an increase of 56 per cent. in the daily average population. During 1909 there was an increase of 11 per cent. over 1908 in the daily population, or of 73 per cent. over 1903. He advises comprehensive hospital plans, including the rebuilding of the old portions of the present hospital, so as to accommodate 2,500 patients, this to be done gradually so as to interfere as little as possible with the existing hospital provisions.

—The new factory law which requires employers to promote the health, comfort and safety of employees went into effect January 1. The new law provides for the protection of the employees against machine injury, by enclosed hatchways, elevators, etc.; the keeping of premises in clean sanitary condition, of equal temperature, and with toilet facilities, and prohibits the taking of food into rooms where poisonous substances are present; prescribes the removal of poisonous or noxious fumes

as far as practicable, and a report to the state factory inspector of all accidents or injuries resulting in death. Failure to comply with any provision of this act is punishable by a fine of from $10 to $50 for the first offense, and from $25 to $200 for the second.

—The Society of Medical History of Chicago has been recently organized, with Dr. Isaac N. Danforth as president, Dr. N. S. Davis as vice-president, and Dr. George H. Weaver as secretary. Its council consists of Drs. Ludvig Hektoen, George H. Weaver, John Edwin Rhodes, N. S. Davis, Henry T. Byford and George Henry Cleveland. Dr. Howard A. Kelly, of Baltimore, will deliver the address at the first meeting, which will occur on the evening of Feb. 19, 1910. The society has been formed for the purpose of systematically collecting and permanently preserving in an accessible manner any matters which are or will become of interest in connection with the medical history of institutions, organizations and individuals, especially of Chicago and the surrounding states. The society asks the active support and help of the profession in its efforts to secure the desired materials. It makes a special appeal to those outside of Chicago for anything antedating the Chicago fire. All communications should be sent to Dr. George H. Weaver, secretary, 1743 West Harrison street, Chicago.

MEDICAL SOCIETY NOTES.

The St. Clair County Medical Association held its annual meeting at Priester's Park, January 5, and elected the following officers: President, Dr. George E. Hilgard, Belleville; vice-president, Dr. Charles Skaggs, East St. Louis; secretary, Dr. E. H. Lane, French Village; treasurer, Dr. Adolph Hansing, Belleville. Dinner was served. Dr. Marshallton, of Washington University, St. Louis, delivered a lecture illustrated with stereopticon views. Plans are now under way to entertain the American Medical Association, when it meets in St. Louis next June.

The following resolutions were submitted by Dr. Noble at the meeting of the Council of the Chicago Medical Society January 11:

WHEREAS, the Chicago Medical Society is an integral part of a constituent society of the American Medical Association, and therefore vitally interested in the welfare of that great organization, and

WHEREAS, certain conditions exist which menace the best interests of the members of the American Medical Association, and of the profession at large; therefore, be it

Resolved, that the Chicago Medical Society in council assembled recommends the following changes in the policies and management of the American Medical Association, viz.:

1. The laws should be so amended that no one person will be permitted to hold, at the same time, more than one executive or honorary office in the Association.

2. The office of General Secretary, and the positions of Editor and Manager should be separated, and no person should be permitted to fill more than one of these places at one time.

3. The offices of Editor and Secretary should be filled only by men educated in regular scientific medicine and of unimpeachable professional records.

4. The number of Trustees should be increased.

5. All officers and employees whose duties involve financial responsibility should be bonded.

6. The laws governing admission to membership in the American Medical Association should be so amended as to make it mandatory upon the secretary to enroll applicants who have complied with the provisions and the by-laws governing the same.

7. Space should be set apart in the *Journal* for free and courteous discussion of the policies and methods of the Association, or for any other matters which may appeal to the membership at large as bearing upon the interests of the Association.

8. Provision should be made for the initiative and referendum.

9. No member should be expelled from the Association without a fair trial and full hearing.

10. No person who is a general officer or member of the House of Delegates or Board of Trustees or employee of the American Medical Association should be eligible to serve as a general officer or member of the House of Delegates, or Council, of any constituent Association.

11. *Be it further resolved,* that the Secretary of the Chicago Medical Society be instructed to publish these resolutions in full in the *Bulletin* of the Society, and to transmit a copy of the same to the *Journal* of the American Medical Association and to the editors of the various state journals.

The resolutions were discussed by W. A. Pusey, James E. Stubbs, M. Z. Albro and M. L. Harris.

On roll-call vote, they were adopted.

PUBLIC HEALTH.

—A lie to the effect that several Chicago hair dressers had become infected with leprosy from Chinese hair was recently nailed by the Health Department after thorough investigation.

—Better join the army of "fresh-air cranks" and stick around a while longer. Those who go on breathing dirty air will continue to be recruits for the vast army of pneumonia and consumption victims now marking time in the "pearly streets."—From the *Bulletin of the Chicago Department of Health.*

—The Chicago Health Department has arranged to send duplicate death certificates to the census bureau, which will classify them and return the tabulation for publication in the Bulletin at a later date. It has also adopted the latest revision of the international classification of the causes of death. In the new certificate an attempt is made to discover the exact occupation of the decedents at the time of contracting the fatal disease.

—The appropriation for the Chicago Health Department, as finally passed by the council, was $545,118, nearly 10 per cent. less than the appropriation for 1909. This gives the munificent sum of 23.8 cents per person. Mr. Riis, the New York sociologist, spoke of the department as a model of efficiency, and urged more liberal treatment by the city council. A reduced appropriation for an admittedly efficient department, when

the total budget calls for many millions more than ever before, and some other departments of the city government are openly accused of squandering large sums of money, looks like a penalty on efficiency and economy.

—On December 6, the governor appointed as members of the State Food Standard Commission, Charles E. M. Newton, "a representative of the Illinois Food Manufacturing Industries," and Dr. Walter S. Haines, Chicago, "an expert food chemist of known reputation," in accordance with the requirements of the law, and these gentlemen constitute the State Food Commission, with Mr. A. H. Jones as chairman, Dr. T. J. Bryan, 1620 Manhattan Building, Chicago, as corresponding and recording secretary. Among the early subjects to be considered are ice cream, condensed milk and evaporated milk. The commission will not make a standard until it has fully investigated both scientific data with reference to the products, and the trade conditions and customs relating thereto. It requests all interested to submit briefs in triplicate to the secretary of the commission at as early date as possible. After these briefs have been considered, a public hearing will be given to those interested, for the presentation of evidence and arguments.

NEW INCORPORATION.

Chicago Surgical and Electrical Company, $10,000; surgical and electrical instruments; T. Lidberg, A. Frick, G. A. Jacobs.

MARRIAGES.

Robert Abercrombie Smith, M.D., to Miss Emily Wilk, both of Chicago, Jan. 1, 1910.

Guy Carson Kinnaman, M.D., to Miss Ivy Irene Brown, of Morrison, Ill., Dec. 29, 1909.

Edwin F. Stannus, M.D., to Miss Eolia Miller, both of Quincy, Ill., at St. Louis, Dec. 16, 1909.

Bradford Allen Camfield, M.D., to Miss Augusta Esther Butts, both of Chicago, Dec. 23, 1909.

Ernest Paul Murdock, Jr., M.D., Chicago, to Miss Edythe Wood, of Albany, N. Y., Dec. 27, 1909.

George Warner Mosher, M.D., Chicago, to Mrs. Mary Isabelle Fixen, of Racine, Wis., Jan. 5, 1910.

DEATHS.

Joseph P. Gray, M.D. University of Cincinnati, 1908; died at Springfield, aged 23, from erysipelas.

Amos L. Norris, M.D. Rush Medical College, 1872; died at his home in Farmer City, Ill., December 16, from paralysis, aged 62.

Josiah Raymond Kelly, M.D. University of Michigan, Ann Arbor, 1872; died at his home in Quincy, Ill., July 2, from dysentery, aged 62.

John Baptist Knoebel (license Ill.); a practitioner of nearly fifty years; formerly of Highland, Ill.; died at his home in Manitou, Colo., January 1, aged 77.

Oscar Martin Duncan, M.D. University of Louisville (Ky.) 1907; formerly of Bridgeport, Ill.; died in Bay St. Louis, Miss., October 23, from bronchopneumonia, aged 34.

Walter Crooks Bowers, M.D. Rush Medical College, 1882; a member of the American Medical Association; died at his home in Decatur, December 31, from pneumonia, aged 52.

Samuel Wheeler Shaw (years of practice, Ill., 1901); for forty-seven years a practitioner of Chicago; died at his home in that city, December 20, from arteriosclerosis, aged 86.

Charles Albert Palmer, M.D., Northwestern University Medical School, Chicago; died at his home in Princeton, November 6, of anemia with toxic degeneration of the cord, aged 54.

Richard A. Pinkley (license, Ill., years of practice, 1877); for forty years a practitioner of Illinois; died at his home in Bushnell, December 16, from cerebral hemorrhage, aged 76.

Almon Brooks, M.D. University of Virginia, Charlottesville, 1865; a prominent specialist in internal medicine; died at his home in Chicago, December 25, from valvular heart disease, aged 68.

Joseph Gilbert Gray, M.D. Medical College of Ohio, Cincinnati, 1909; who was about to open an office in Springfield, Ill.; died at St. John's Hospital in that city, December 31, from erysipelas, aged 23.

Charles P. Geudtner, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; a specialist on diseases of the eye; died at his home in Chicago, January 5, from pneumonia, aged 44.

Henry D. Shonts, M.D. Philadelphia; for nearly seventy years a practitioner of medicine; and for more than half of that time in Centerville, Iowa; died at his home in Chicago, January 10, from pneumonia, aged 86.

Otto Fikenscher, M.D. Barnes Medical College, St. Louis, 1897; of Sibley, Ill.; a member of the American Medical Association; died at the home of his parents in Lohman, Mo., January 6, from pneumonia, aged 37.

Fred Robert Disney, M.D. College of Physicians and Surgeons, Chicago, 1907; a member of the Oklahoma State Medical Association; formerly of Chicago; died at his home in Pocasset, Okla., December 25, from pneumonia, aged 31.

Thomas J. Shaw, M.D. Rush Medical College, 1880; for twenty years assistant demonstrator of anatomy and clinical assistant to the professor of gynecology in his alma mater; died at his home in Chicago, January 20, from senile debility, aged 68.

Otto Fikenscher, M.D., of Sibley, Ill., died of pneumonia, Jan. 6, 1910, at the age of 38 years. He had practiced at Sibley for eight years. He was a graduate of Barnes Medical College, St. Louis, and was a member of the Ford-Iroquois Medical Society.

Howson White Cole, M.D. Jefferson Medical College, 1854; a member of the Medical Society of Virginia; surgeon in the Confederate service during the Civil War; thrice mayor of Danville; died at his home in that city, January 8, from senile debility, aged 79.

William Henry St. Clair (years of practice, Ill., 1877); a member of the American Medical Association; said to have been the oldest practitioner of Effingham county, Ill., where he had practiced for forty-two years; died at his home in Effingham, November 19, from heart disease, aged 81.

George Sintzel, M.D. Missouri Medical College, St. Louis, 1878; for thirteen years president of the village council of Niles Center, Ill.; and formerly a member of the staff of St. Francis Hospital, Evanston and Cook County Hospital; died at his home Jan. 2, 1910, from pneumonia, aged 53.

Amos L. Norris, M.D., died in Farmer City, Dec. 15, 1909. Dr. Norris practiced medicine in Illinois thirty years; was advisor on Pension Board of De Witt County; physician and surgeon of the Illinois Central R. R.; member of the Court of Honor and Modern Woodmen of America; he died of paralysis and uremia.

Don Morrison Waggoner, M.D., of Lewistown, Ill., Fulton County, died Jan. 1, 1910, aged 48, on the steamer *Cleveland*, near Kobe, Japan. Dr. and Mrs. Waggoner left home October 15 for a tour around the world, and the sad termination of this outing was his death at sea as above stated. The doctor developed symptoms of cancer of the tongue about two years ago, and had borne the agonies of this terrible affliction with fortitude. He was born Jan. 11, 1861; the son of Hon. Daniel Waggoner, at one time sheriff of the county. He graduated at Rush in 1881 and the following year at Bellevue Hospital Medical College, New York City. Since then he has been engaged in practice and had built up a reputation as one of the foremost physicians and surgeons in that part of the state. By frugality and shrewd investments he accumulated a snug fortune which he leaves to his wife. The doctor had also taken a number of post-graduate courses, and thus kept up with the times; besides he was square with his brother physicians and patients, who now with his family lament his early decease.

FIGHTING TUBERCULOSIS.

Some Things Chicago is Doing to Control the "Great White Plague."

There are indications that the fight against tuberculosis throughout this country is to be waged with greatly increased vigor during the coming year. Inquiries are being received from all parts for information as to what Chicago is doing to control this disease. In response to these inquiries the following brief summary of the methods and agencies employed in this city is presented:

1. Reports of all living cases—all forms of tuberculosis—are required by ordinance. Card index of cases kept by premises and by individuals. All cases are spotted on maps of city. Statistical studies of cases and of deaths are made in detail.

2. Living cases are supplied with pamphlet setting forth proper care and treatment of patients, attendants and other contacts.

3. Living cases are furnished free treatment and advice at any of the eight free dispensaries maintained by the Chicago Tuberculosis Institute. Nurses from these dispensaries visit homes of patients for the purposes of observing living conditions and to give advice to patients, their families and attendants. They also visit all homes where deaths from tuberculosis have occurred.

4. The Chicago Tuberculosis Institute maintains the Edward Sanatorium at Naperville, Ill., for treatment of early cases.

5. The Jewish Women's Clubs of Chicago maintain the Winfield Tuberculosis Sanatorium at Winfield, Ill. (not far from Chicago), for the treatment of incipient cases. This institution is endowed.

6. For the care and treatment of early cases, the city is about to build a large sanatorium, such having been approved by popular vote—of more than four to one—at the Spring election of 1909. A tax levy of one-half mill provides nearly $500.000 yearly for building and maintenance. This Municipal Tuberculosis Sanatorium will probably be opened before the close of 1910.

7. The County maintains a large hospital at Dunning, just outside the City, for care of late cases.

8. The new County Tuberculosis Hospital, on the grounds of the County Hospital, near the center of population, has recently been opened. Accommodations are provided for 300 advanced cases.

9. The Chicago Tuberculosis Institute, cooperating with the Board of Education, maintains, during the summer, an open-air school for tuberculous children—with splendid results. For the 30 children in attendance during the summer of 1909, a net gain of 115 pounds in weight was recorded, temperatures were reduced to normal, nervousness was controlled and physical conditions generally were greatly improved.

10. During the colder months of winter further experiments in open-air treatment of junior classes in certain public schools have been carried on. Classes are conducted in school rooms with windows removed, the children being dressed warmly to prevent body chill. The result has been improved health, stimulated mental activity and control of nervous tendencies.

11. Special efforts are put forth to encourage early diagnosis. Tuberculin for diagnostic purposes is supplied free by the Chicago Health Department.

12. Laboratory facilities of the Health Department are available to physicians for diagnosis of tuberculosis, without charge.

13. Disinfection of tuberculosis premises is performed.

14. Some ordinance regulations:

(a) Milk sold in Chicago must come from tuberculin tested cows or be pasteurized. The same requirement applies to milk products—butter, buttermilk, cheese, etc.

Samples of milk are taken daily for laboratory exaination. Special attention is given to bacterial count of pasteurized milk.

Cows kept in city must be tuberculin tested, otherwise permit to keep is refused.

Only bottled milk can be sold in stores where other merchandise is sold.

(b) Meat sold in Chicago must bear Federal or City inspection stamp "Approved" or "Passed."

(c) Foodstuffs offered for sale—especially on streets—must be screened against dust and flies.

(d) Employment of consumptives in manufacture or handling of foodstuffs is prohibited by ordinance.

(e) Spitting in public places is prohibited. Violators are prosecuted from time to time—to serve as warning to others.

(f) Ordinances regulating ventilation, lighting and overcrowding in homes, workplaces, public halls, conveyances, etc., more rigidly enforced than ever before.

15. Outdoor life and recreation is markedly encouraged in Chicago. This city, notwithstanding it already has the largest park area and the largest number of parks of any city in the world, is steadily and systematically increasing its parks each year. A policy, largely followed in recent years, is to establish these "breathing spots" in the more congested areas of the city.

Public playgrounds for children have also been established in the densely populated areas, thirteen now being in operation and more are being created.

16. Personal cleanliness is promoted through the establishment of sixteen free public baths in those parts of city where bathing facilities in the homes are very limited. More are under construction. Upwards of 900,000 persons availed themselves of these free baths during the last year.

Free bathing beaches are in operation during the summer months.

17. Educational work—the most important factor in the reduction of tuberculosis—is actively carried on by the City, the State and by civic and philanthropic organizations. The Department of Health of Chicago contributes to this work as follows:

(a) Lectures, illustrated and otherwise, are given almost daily by the Commissioner of Health and Bureau Chiefs, before gatherings in churches, schools, clubs, public halls, etc.

(b) The Department issues a weekly Bulletin devoting much attention to tuberculosis—some simple story with words of timely advice. These Bulletins are mailed to all teachers, preachers, physicians, settlement workers and others interested in health conservation.

(c) Graphic displays of tuberculosis statistics are prepared for hanging in school rooms, church lecture rooms, clubs, lodge rooms and other public places. Each of these "picture lessons" carry some tersely worded preachments along the margins.

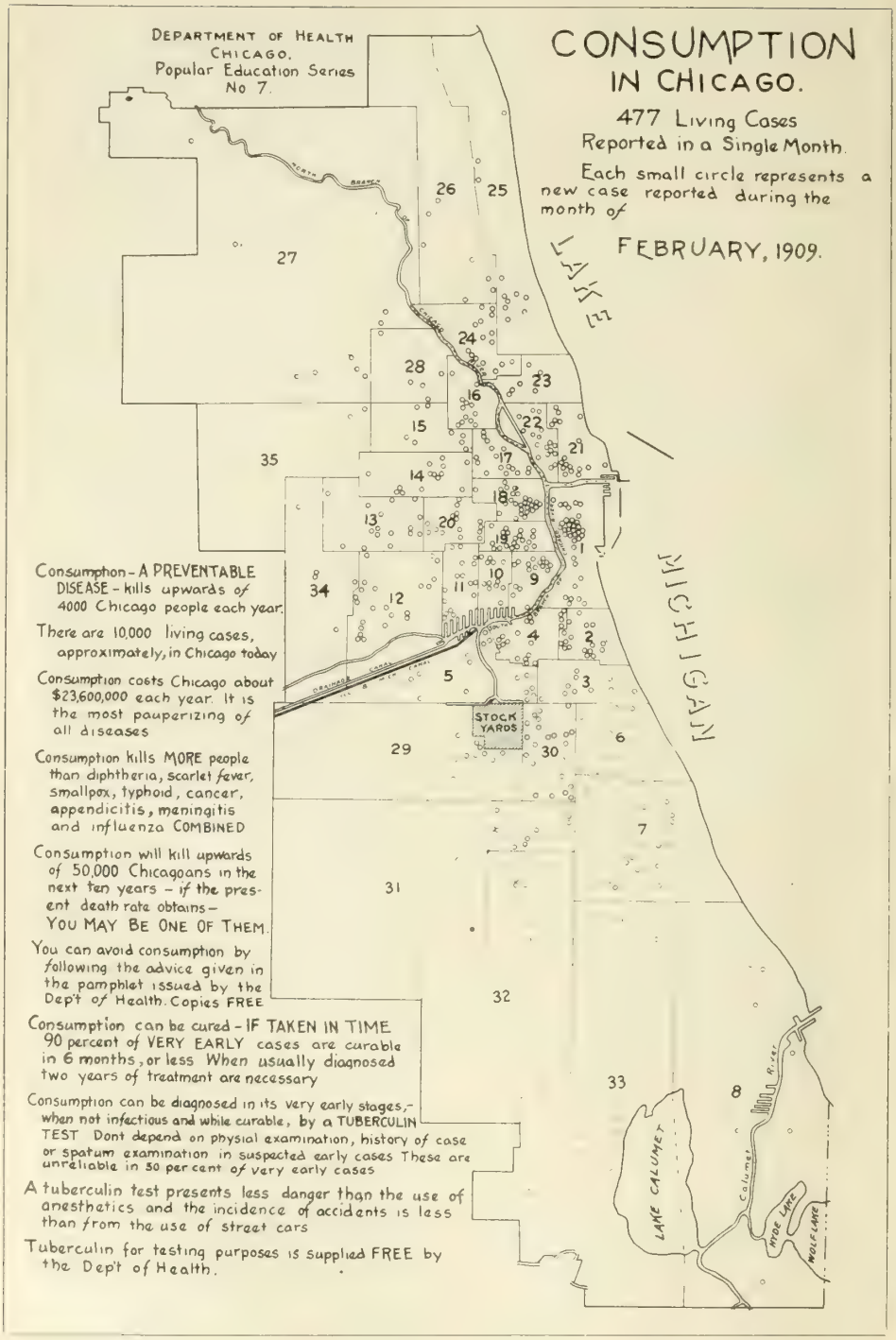
(d) Placards of advice are carried in the advertising spaces of street cars.

(e) Posters of brief, crisp statements are hung in factories, department stores, etc.

(f) Leaflets giving short, interesting stories about tuberculosis are prepared and distributed each week among the neighborhood newspapers, trade journals, fraternal publications, etc. Advice is thus given wide circulation among the foreign speaking inhabitants of the city in the language of the readers of these publications.

(g) Pamphlets of advice as to the care and treatment of tuberculosis are distributed.

(h) The daily newspapers of Chicago give much space to words of warning and advice issued by the Health Department. One of Chicago's leading papers inaugurated the "Daily Health Hint"—a short printed story driving home some important health fact—displaying it in the most prominent position on its front page.


DEPARTMENT OF HEALTH
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Popular Education Series
No 7.
CONSUMPTION
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477 Living Cases
Reported in a Single Month.
Each small circle represents a new case reported during the month of
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LAKE MICHIGAN
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Consumption - A PREVENTABLE DISEASE - kills upwards of 4000 Chicago people each year.
There are 10,000 living cases, approximately, in Chicago today
Consumption costs Chicago about $23,600,000 each year. It is the most pauperizing of all diseases
Consumption kills MORE people than diphtheria, scarlet fever, smallpox, typhoid, cancer, appendicitis, meningitis and influenza COMBINED
Consumption will kill upwards of 50,000 Chicagoans in the next ten years - if the present death rate obtains - YOU MAY BE ONE OF THEM.
You can avoid consumption by following the advice given in the pamphlet issued by the Dep't of Health. Copies FREE
Consumption can be cured - IF TAKEN IN TIME
90 percent of VERY EARLY cases are curable in 6 months, or less When usually diagnosed two years of treatment are necessary
Consumption can be diagnosed in its very early stages, - when not infectious and while curable, by a TUBERCULIN TEST Dont depend on physial examination, history of case or spatum examination in suspected early cases These are unreliable in 50 per cent of very early cases
A tuberculin test presents less danger than the use of anesthetics and the incidence of accidents is less than from the use of street cars
Tuberculin for testing purposes is supplied FREE by the Dep't of Health.

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ORIGINAL ARTICLES

SURGICAL ASPECTS OF EXOPHTHALMIC GOITER.*

ALEXANDER HUGH FERGUSON, M.D.
CHICAGO.

There is very little to be said regarding the surgical aspects of exophthalmic goiter, for the reason that this subject has been so thoroughly threshed over; the technic of the operation has been presented so many times by so many surgeons, with slight improvements in the technic. I might say, however, that any operative procedure upon a patient suffering from exophthalmic goiter is an opprobrium upon the healing art. The surgeon operates upon these cases because they are forced upon him. He does not see them early, consequently they are the cases in which internal medication has failed and is doing no good. The danger comes in treating them medically too long. Not infrequently the fault is with the patients themselves. The cases that come to the surgeon of a secondary nature, as has been pointed out by Dr. Lewis, should be operated upon, and when proper surgical precautions are carried out they practically all get better. The early cases that are operated on practically all get better. The cases that are operated on before heart changes have taken place practically all get better. Then we come to the cases where the disease is continuous, and in which there is profound poisoning of the system, and in which there are heart and blood changes. What shall we do with these? They are thrown upon the surgeon. We must try and prepare them for operation and then operate rapidly. It is in this class of cases that the mortality occurs with the surgeon, and although operative procedures are an opprobrium upon the healing art, which I hope will not always continue, the best treatment to-day for exophthalmic goiter as a whole is the knife. That should not be so, but it is a fact.

* Read in a Symposium on Exophthalmic Goiter before the Chicago Medical Society, Nov. 17, 1909.

I have had my assistant, Dr. Zapffe, look up the recent statistics in this regard, and he will present them to you in a brief way in my behalf.

The bedridden cases are very difficult to manage. Let me mention one such case. The wife of a well-known doctor in Joliet was bedridden with exophthalmic goiter for three months. We prepared her for operation, and following the suggestion of Dr. Crile, stole the gland away. When I arrived at the depot her husband began to put her under the influence of the anesthetic, and within half an hour after my arrival at the patient's home the thyroid gland was removed, and the woman slowly got better until now she is able to enjoy life and to look after her family. I was called to see another patient, who was bedridden with exophthalmic goiter, but when I got to the house the patient had just died. If the anesthetic had been begun in that case it would have been blamed for the death. If the incision had been made and a portion of the gland removed, the operative procedure would have been blamed. I recall another patient who died on the table, who would not have lived more than two or three days at most without operation. So I do not know when to refuse my surgical services after everything else has been tried.

It is unnecessary for me to go over the technic of the operation, the incision, the management of hemorrhage, etc., because every surgeon knows that he must control hemorrhage, and that in exophthalmic goiter cases he must have absolutely free drainage.

I will now ask my assistant, Dr. F. C. Zapffe, to give the statistical report.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.*

Fred C. Zapffe, M.D.
CHICAGO.

Any one who has had an opportunity to observe the truly marvelous results which follow the surgical treatment of exophthalmic goiter must confess that it is by all odds the best treatment for this disease in nearly every case. Of course, the internist prefers to adhere to the medical treatment, and in support of his belief numerous cases can be cited where the results have been most satisfactory. On the other hand, every practitioner has seen cases in which every form of treatment, except surgical, has proved ineffectual, and when finally surgical treatment was resorted to, a cure, or at least most marked improvement, followed.

It would be rash to say that every case of exophthalmic goiter is suitable for surgical treatment, because it is not. There are cases in which surgery has failed even to give the patient relief, but that may be said of any form of treatment, not only the surgical. Most authorities are agreed that in those cases where surgery has failed to produce results it was not the fault of the operation, but the fault of too late an operation being performed. Surgical treatment should not be considered a last

* Read in a Symposium on Exophthalmic Goiter before the Chicago Medical Society, Nov. 17, 1909.

resort, but should be looked on in the same manner as the medical treatment is regarded, as a form of treatment and not as the last thing to be attempted, in the hope of giving the patient relief. An early operation, a careful operation, done by an inexperienced operator, and not by an occasional operator, are essential to success.

The best results from the surgical treatment of exophthalmic goiter are obtained by the men who are most competent to perform this operation, and this statement is borne out by a review of the results published by Kocher, who has, without question, performed the operation more often than any other surgeon. His results, however, are corroborated by other operators of note, such as Ferguson, the Mayos and Halsted, whose mortality is not over 5 per cent. Most of the patients operated on by these men have made a complete recovery, a few have received only temporary or partial benefit, while a very small percentage have not been benefited or they have had a recurrence of the disease. However, a comparison of these results with the results obtained from medical treatment will show a balance in favor of operation. The operative mortality is exceedingly small, and in most instances it must be ascribed either to inadvised operation, as in the very acute cases, or where the patient's condition was such that immediate operation was absolutely contraindicated.

It is well known that in some cases the disease develops with startling rapidity and severity. In the short period of three or four weeks the patient manifests to a marked degree all of the cardinal symptoms of the disease, and it is in cases such as these that early operation is contraindicated. If the symptoms in these cases do not yield to suitable preparatory treatment, such as rest and quiet, diet and hygiene, an operation sometimes is performed in the hope that the patient will be relieved. These patients recover promptly after the operation, although in a few instances the case ends fatally. It is extremely probable, however, that recovery would not have ensued without operation, and, therefore, the operation must be considered justifiable, and the result in no way militates against the desirability of operation.

Other cases in which operation is contraindicated are those in which there exists a cardiac lesion, cases of such long standing as to have produced a severe nervous disturbance, especially delirium, where there is present a degenerated heart muscle, irregular pulse or low blood-pressure.

A most valuable paper, to which brief reference may be made at this time, is that of A. Kocher.[1] Out of 3,460 operations done for goiter in his father's clinic up to that time, 315, or a little less than 10 per cent., were done on 254 patients afflicted with exophthalmic goiter. There were only 9 deaths (3.5 per cent.) in this series, only one of these occurring in the last 91 operations. All of the patients were benefited; 83 per cent. were cured. Kocher emphasizes that patients with a low blood-pressure should be watched and prepared carefully for operation, and should never be subjected to an immediate extensive operation. If there is not an increase in the lymphocytes, the case is a serious one. In

1. Jour. A. M. A., Oct. 12, 1907.

one early undeveloped case and in cases of long standing, Kocher found such an absence of lymphocytes. In not one of Kocher's cases was the patient not benefited in some way.

Krecke[2] operated on 17 cases and comments on the fact how quickly the nervous symptoms subside after the operation. In 888 operations collected by him from five different clinics, the mortality was 9 per cent. In one point his experience does not coincide with that of other operators. He has not seen the exophthalmos subside entirely in any case. Eleven patients operated on more than two years ago have been in excellent health ever since. In common with other surgeons, Krecke urges earlier resort to surgery and careful examination for a persisting thymus.

Klemm[3] had no operative mortality in 32 cases. After eight years twenty-five patients are still cured; one improved; one not improved; five untraceable. He operates in one sitting, excising the half of the thyroid which is most involved, and ligates the vessels on the opposite side.

Garre[4] operated on 35 patients, 20 of whom were traced five years afterward. The exophthalmos had disappeared in 12, lessened in 3, remaining unmodified in 5. The tachycardia had disappeared in four cases. Nervous disturbances were still apparent in all the patients. Ten were in excellent health. Statistics compiled by him from various clinics showed 85 per cent. of the patients cured or markedly improved. He calls attention to a very important point, namely, the search for a persistent thymus in all these cases. He found it present in 77 per cent. out of 56 cases that came to the autopsy table.

Riedel[5] operated on 80 patients. Six died from bronchopneumonia out of the first 50 cases; one died from chloroform narcosis. Only one patient died from bronchopneumonia in the last 30 cases. The chief danger, he says, is from waiting. Early removal of the gland is urged, even though it may be only slightly enlarged.

In March, 1909, Kocher reported 320 cases, with 11 deaths (3.44 per cent.). Since 1906 he has performed 153 operations, with only 2 deaths, 1.5 per cent. This mortality is not much greater than that of ordinary goiter, among which, during the last six hundred operations, he has had three deaths, 0.5 per cent.

McCosh performed 23 operations, with one death. Of 19 patients traced, 4 were apparently cured at twelve, eight, seven and four years, respectively, after operation. Twelve patients operated on during the past year are improved. Two patients, although benefited very much, still suffered from nervousness and tachycardia on exertion. Only one patient had not been benefited.

Dunhill performed 32 operations on 25 patients, with only one death. Only one of the patients was not improved by the operation, and it was noted in this case that while the wound was draining to the surface, the

2. Krecke: München. med. Wchnschr., Jan. 5, 1909.
3. Klemm: Arch. f. klin. Chir., No. 1, Vol. 86.
4. Presse Med., Feb. 26, 1908.
5. Deutsch. Med. Wchnschr., Oct. 1, 1908.

patient did well, the pulse being 80, but when the wound healed, the pulse increased in frequency and the associated symptoms returned.

Charles Mayo has had a mortality of 5 per cent. in the last 200 operations. Of the 167 patients traced, 70 per cent. were improved, cured or greatly improved, and 94 per cent. were cured, improved or somewhat improved.

It is apparent, therefore, from the citations given, and the list could be continued indefinitely, that with improved technic the mortality has been greatly reduced.

The necessity for thorough preparatory treatment has been emphasized repeatedly, and the importance of this statement can be appreciated only by those who have had occasion to perform this operation often. This is especially true in the advanced and rapidly developing cases, in which tachycardia and mental excitement are marked, and are likely to be aggravated by preparations for operation. It is in cases such as these that Crile's method of "stealing away" the gland is useful. As a rule, the sufferer from exophthalmic goiter is in a nervous state, which is very undesirable, no matter what operation is to be performed. Therefore, the patient should be placed in bed and kept absolutely quiet for at least a week prior to the operation. During this time suitable medical treatment may be employed, so that when the patient enters the operating room it is without fear or dread of the consequences. It is in such cases that the best results are obtained. The patient is placed on a restricted diet, although by no means a starvation diet, and Clemens' solution, ten drops three times daily, is administered, which Ferguson has shown to be particularly useful in these cases. Some surgeons prefer to give belladonna or atropin, others have used Fowler's solution and strophanthus, and still others have given minute doses of morphin. None of these, however, seems to be quite as effective as Clemens' solution.

In Dr. Ferguson's service at the Chicago Hospital excellent results have been obtained from the use of chloretone, given either for several days before the operation or only on the morning of the operation. The chloretone, when given in the former way, is administered in 5-grain doses, every three or four hours, and when given just before operation as high as 50 grains are taken within a period of two and one-half hours—25 grains two hours before operating, 15 grains one hour before, and 10 grains one-half hour before. The result of this medication is that the patient is partly drowsy, is perfectly quiet and not resistant. Some patients are brought to the operating table soundly asleep, and are aroused only with difficulty. Not only does it remove restlessness, nervousness and fear, but considerably less of the anesthetic is required, which is always a most desirable factor in any operation. The patient is anesthetized quickly, less anesthetic is required to keep him under, the operation can be performed more quickly, and the post-operative results are better.

The various operations employed seem to have been equally productive of good results. The method most in use is the collar incision of Kocher, exposing the gland freely, removing as much of it as in the opinion of

the operator is indicated, after ligation of the thyroid vessels, and closing the wound according to the method of choice, inserting a drain for a few days. Free drainage must always be provided for by means of silkworm gut, a capillary or a glass drain placed in the angles of the wound, or in the center, as is the custom of Kocher. In severe cases the operation may be performed in several sittings. Preliminary ligations of the superior thyroid arteries are made in order to limit the vascularity of the gland and to reduce the amount of thyroid poison taken into the general circulation. In pronounced cases, with good hearts, a unilateral excision of the larger and more vascular half of the gland, including the isthmus, is made. In many cases the ligation of two or three arteries and veins gives equally good results with removal of half of the gland. The removal of more than half of the gland should not be considered except in rare cases.

The important principles in the operation are to avoid unnecessary handling of the gland, to check hemorrhage promptly, no matter how slight, to be particularly careful not to remove the parathyroids and to provide for suitable drainage.

Some surgeons have employed what might be termed a subcutaneous ligation of the vessels without exposure or removal of the gland, but this procedure must be limited to those cases that are particularly suitable for operation, that is, where the gland is not large or where only one lobe is involved, where the symptoms are very mild in severity, and where the patient is not suffering greatly from the thyroid toxemia; in other words, where extensive surgical intervention is contraindicated or unnecessary.

In the typical case of exophthalmic goiter more extensive measures must be employed, and it is here that the procedure outlined above is indicated, and is productive of the best results. Ferguson employs the intracapsular ligation of the vessels, thus removing almost entirely all risk of injury to the parathyroids, because, as a rule, these glandules are situated outside of the thyroid capsule. When found within the capsule, it is usually in the posterior part of it, so that by avoiding injury of that portion of the capsule, one need not worry about the parathyroids.

Formerly, before the physiologic importance of the parathyroids was fully appreciated, tetany followed in very many cases of thyroidectomy. Now, however, tetany occurs but rarely. In 700 cases operated on by the Mayos, not a single case of tetany occurred. Only those who have seen a case of tetany can be fully alive to what it means and will strive always to avoid removing the parathyroids. However, the intracapsular ligation method of Ferguson and the habit of staying away as much as possible from the posterior capsule of the gland give reasonable assurance of not interfering with the parathyroids in any way. Of the many points to be borne in mind in performing a thyroidectomy, avoiding the parathyroids is by no means the least.

Where the disease was so advanced as to necessitate complete removal of the gland, Kocher has transplanted parathyroids with fairly good

results, in one case the transplantation having been made into the tibia. Such extreme measures, however, are rarely indicated or necessary; usually only a portion of the gland need be removed. Ferguson removes all of the gland except a small button at each corner, which leaves sufficient thyroid tissue to obviate the occurrence of unpleasant symptoms afterward. His results have shown the value of this procedure.

All hemorrhage should be checked promptly; bleeding points, no matter how small, are ligated, and oozing may be checked either by pressure or by gently swabbing with Harrington's solution. For ligature material catgut or very fine silk may be used, according to choice of the operator.

Either a small or a large dressing may be applied. In favor of the large dressing stands out prominently the one fact that in all of these operations there is considerable oozing afterward, and by applying a sufficiently large dressing, the so-called mammoth dressing, the fluids are absorbed quickly, and it will not be necessary to disturb the patient for at least twenty-four hours afterward, when the drain is removed, either wholly or in part, and a fresh dressing is applied.

The after-treatment is important. Of prime importance is supplying the patient with a sufficient amount of fluids, preferably water, and next is the enforcement of absolute quiet. It is remarkable how well these patients do. Relief is apparent in many cases within two or three days after the operation, and in every case the patient is able to be up and around within a week or ten days. The tremor has disappeared, there is no more headache or gastro-intestinal disturbance of any kind, and even the exophthalmos, when present before the operation, is often unnoticeable. The general condition of the patient also improves rapidly, sometimes to a really astonishing extent. In two cases operated on by Dr. Ferguson, the patient gained in weight one pound a day for forty days. The patients felt well, and when last heard from were still in the best of health, without any recurrence of the thyroid disease. Of cases operated on by Dr. Ferguson at the Chicago Hospital within the last few years, two have died; the remainder are in excellent health. One case is of the most severe acute type. The symptoms of the most aggravated form developed suddenly, and operation was performed after six weeks of ineffectual medical treatment, in the hope of benefiting the patient in some measure at least. The second case was one of long standing.

With reference to the method of anesthesia: Mention has already been made of the use of chloretone preliminary to the operation for the purpose not only of quieting the patient, but to promote safer anesthesia. Ether appears to be the anesthetic of choice when general anesthesia is desired. Many surgeons, however, prefer to operate under local anesthesia, notably Kocher. Advantages are claimed for both methods. The general anesthetic ensures absolute quiet on the part of the patient and eliminates a certain element of dread on the part of the operator that the patient may be suffering. For the local anesthesia it may be claimed that

the cooperation of the patient is secured, the shock is lessened, there are no post-operative symptoms, and otherwise the results are in every way the equal of those secured from general anesthesia. So that the choice of method is largely what one has been in the habit of doing, and what has, therefore, yielded good results.

THE MEDICAL TREATMENT OF GRAVES' DISEASE.*

M. Milton Portis, M.D.
Assistant Professor Medicine, Rush Medical College; Professor Medicine, Post-Graduate Medical School.
CHICAGO.

There is still a great diversity of opinion in regard to the treatment of Graves' disease. This is not surprising when we consider that as yet no satisfactory etiology has been advanced for this bizarre disease. As a result of recent physiologic experimental observations and histologic studies, it would seem that Graves' disease is due to hyperthyroidism, or to hyperactivity of the thyroid gland. A clinical consideration of the manifold manifestations of this protean disease leads one to believe that the goiter is secondary to some general toxemia, for in some cases the thyroid gland has been found to be normal or even atrophic. The source of this toxemia is most likely the alimentary tract. In carnivorous animals we find relatively larger thyroids. Meat eaters call upon their thyroids for more work. Some type of toxin originates in the alimentary tract in the digestion of meat that the thyroid must neutralize. This detoxicatory property of the thyroid was clearly shown by Blum. He demonstrated that thyroidectomized dogs which were doing well on milk developed symptoms of athyroidea as soon as they were fed on meat.

Diet.—This is the most important consideration in the treatment of Graves' disease. Milk alone, or milk diluted with lime-water or Vichy water, or, better still, fermented, as matzoon, should be the chief article of diet. Besides milk, vegetables thoroughly well cooked, and fruit, especially stewed, are to be permitted. Later, when the disease is yielding to treatment, fresh water fish may be given and still later an egg at breakfast may be allowed. Meat is never given and should be avoided for months and even years. Alcohol, tobacco, coffee and tea are to be excluded.

Rest.—This is of great importance, and to be effective one must individualize. In an acute case the best result will be obtained by isolation in a quiet airy room, where the patient can be free from mental disturbances, and a Weir Mitchell rest-cure carried out. An ice-bag or Leiter coil applied over the heart and, in the severe cases, over the goiter as well, will do much to retard and slow the heart. This period of rest must be at least six weeks and longer, depending on the severity of the case.

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* Read in a Symposium on Exophthalmic Goiter before the Chicago Medical Society, Nov. 17, 1909.

Electricity.—The galvanic current, if properly applied, is of distinct service. Mild currents must be used. The kathode is applied at the manubrium near the suprasternal notch, and the anode at the angle of the jaw along the anterior border of the sternocleidomastoid muscle. The static current and the *x*-ray are of doubtful value.

Drugs.—A host of drugs have been recommended, the majority of which have no value. Small doses of bromids, however, are useful to diminish the nervous excitability and reduce the tachycardia. Iron combined with a mild laxative is indicated in the anemic cases. The tincture of strophanthus seems to exert a better influence on the tachycardia than does any form of digitalis. The myocardial degeneration of the chronic cases is to be treated on the usual lines for heart cases. The use of thyroid extract or iodothyrin is not only irrational, but is decidedly dangerous. Thymus extract is inefficient.

Sera.—In the serum therapy of Graves' disease two types are to be considered: an antitoxic and a thyrotoxic serum. The antitoxic serum of Moebius is derived from thyroidectomized sheep, and bases its claim for efficiency on the detoxicatory function of the normal gland. This serum has been in use for a number of years, and given in ascending doses is efficient in some cases and should be tried in all.

The use of milk of thyroidectomized goats, based on the same principle, is very popular in Europe, and a dried product of such milk is on the market under the name of Rodagen. It deserves a trial in every case and will aid in the cure of some of the cases.

The brilliant results demonstrated by a partial thyroidectomy led the writer to attempt experimentally to produce a serum that would destroy the thyroid *in situ*. Experiments were conducted some time ago in which the thyroid glands of dogs were injected into the peritoneal cavity of goats. In the later experiments thyroids freed from blood and, still later, colloid matter alone was used. I will merely quote from the summary of my published paper:

The serum of goats injected with suspensions of the thyroid gland or with thyroid colloid matter of dogs acquires many new and striking properties. Injected into dogs it causes marked symptoms, prominent among which are depression, convulsions, vomiting and rapid breathing, hemoglobinuria, and early death in some cases, and in other animals that lived longer there were present also some fever, lachrymation, loss in weight and progressive weakness. It cannot be claimed that there has been reproduced the exact picture presented by thyroidectomized dogs.

These clinical manifestations are associated with removal of colloid matter from the acini of the thyroid gland, desquamation and disintegration of the epithelial cells of the acini, followed in time by restitutive processes and the growth of papillary proliferations. The parathyroid bodies and hypophysis show no changes. The liver, spleen and kidneys present marked degenerative changes.

The toxic serum is markedly agglutinating and hemolytic for dog's corpuscles even when obtained from colloid matter. If it were possible to remove from the thyrotoxic serum the hemolytic as well as other direct and indirect cytotoxic actions, it would seem warranted to expect still further evidence of a specific thyrotoxin.

The serum of Beebe and Rogers is also based on the hypersecretion theory. They use for their injections the glands of exophthalmic goiter

cases and also normal human thyroids. Both the nucleoproteids and thyreoglobulin are injected into Belgian hares and thus they obtain a serum which is antitoxic and cytolytic. They report favorably with the serum from the thyroids from Graves' patients, but not so with that produced from normal thyroids. Their serum is produced under great difficulty and in small amount and is not available for general use. It is hemolytic and to some extent toxic for other body cells. However, in spite of its dangers it is at present the most effective of the sera.

When the last medical word has been said, in the light of our present knowledge, we still must admit that we are not able to cure all cases medically. Surgery has demonstrated more brilliant results than has medicine so far. But not all cases are surgical. The mild cases, the cases with acute symptoms, the advanced cases with cardiac degeneration, the cases that although operated on have not improved, all these should be treated medically.

The internist should not temporize with cases that resist medical measures or cases with relapse of acute symptoms. These are surgical, and they should be operated on when the acute symptoms are under control and before they have gone too far as chronic cases. Then and then only will the unusual mortality be improved.

100 State Street.

TREATMENT OF EXOPHTHALMIC GOITER WITH SERUM OF THYROIDECTOMIZED ANIMALS.*

S. Krumholz, M.D.

Associate in Neurology, Rush Medical College; Attending Neurologist, West Side Dispensary, Jewish Aid Society.

CHICAGO.

Serum therapy of exophthalmic goiter is based on the theory of disturbed secretion of the thyroid gland. Physiologically, the thyroid secretion or its active principle thyroglobulin detoxicates the toxins of body metabolism. In exophthalmic goiter, the thyroid secretion being in excess or altered disturbs the equilibrium or intensifies the toxicity of the metabolic toxins and gives rise to the clinical syndrome of the disease. By the administration of serum of thyroidectomized animals it is intended to neutralize the perverted secretion of the thyroid gland with an excess of non-detoxicated metabolic toxins.

Although Helfft, Egbert, Bouillard and Virchow have noticed over fifty years ago the existence of an "unusual relation" or, as Virchow expressed it *"eine Art Scheidung,"* between hypothyroidism and exophthalmic goiter, the primary lesion of this disease was not traced to a morbid function of the thyroid gland until Moebius in 1886 conceived his theory of hypersecretion, which he definitely formulated in 1891.

This theory suggested itself when upon the administration of thyroid preparations in this disease it was found that the symptoms were aggra-

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* Read at the meeting of the Chicago Medical Society, Dec. 1, 1909.

vated and that the symptom-complex could be artificially produced by excessive administration of the glandular agent. This observation was materially strengthened by the curative effect which thyroid extract proved in myxedema and by the high percentage of success reported by Kocher and others from operative removal of the thyroid gland.

The hypersecretion theory, however, is extremely handicapped by the absence of direct proof of the detoxicating function of the thyroid gland; by the lack of direct demonstration of the presence of toxins in the body metabolism; by the want of positive evidence of the excess of secretion in this disease, and by even the latest histologic findings of McCullom of compensatory glandular hypertrophy in this malady. Although this latter hypertrophy is thought by some to substantiate the hypersecretion theory. This lack of direct proof tinges serum therapy with the stigma of empiricism, to which even the few specifics at our command were subjected. Nevertheless these opposing factors act as a stimulus to further investigation and are a warning against radical conclusion.

The literature on serum therapy of this disease is comparatively limited, and the reports by various observers are confined to small numbers of cases. But the results of all observers are almost unanimously favorable. In 1897 Burghart injected, for the first time, blood of a myxedematous patient into a case of Graves' disease, and later he used the serum of thyroidectomized dogs. As to the injection of serum of dogs, however, he gives the priority to Ballet and Enriquez of Paris. Lanz is credited with having first used the milk of a thyroidectomized cow and then of goats. He hoped that this milk would form a toxin and neutralize the excessive thyroid secretion. Goebel claims precedence in the use of goats' milk, upon the theory that, since the thyroid gland is the only organ which receives the iodin from the food and changes it into the organic iodin, thyroiodin, which is the active principle that causes the trouble, therefore, the milk of thyroidectomized animals not containing this active principle is deprived of the underlying cause of the disease. Moebius induced the chemical firm of Merck & Co. to make a serum of thyroidectomized sheep for experimental purposes and reported favorable results in several cases. This enabled the profession to easily obtain the new agent and stimulated more extensive observation. Schultes reports a case of Graves', complicated by acute insanity, which he cured with serum of a thyroidectomized dog. He thinks that the serum aborted the psychic disorder and that it counteracts the hypersecretion to a great extent. Duering reports a case of Basedow's, in which symptoms of myxedema developed after prolonged administration of large doses (150 drops daily) of the serum of sheep. Lomer reports marked success with serum of sheep administered to an insane woman who developed exophthalmic goiter at the institution. Alexander reports excellent results in three cases with serum of sheep. Holst, Bauman, Mayer, Gevers, Leuven, Rosenfeld, Hempel and Thienger report having obtained favorable results in single cases. Aronheim reports favorable results in two cases. Sidney Kuh reported 10 cases to this society, of which 9 improved markedly under the treatment. Two serious cases were reported to this society by

Diagrams showing pulse and weight readings of eighteen cases of exophthalmic goiter.

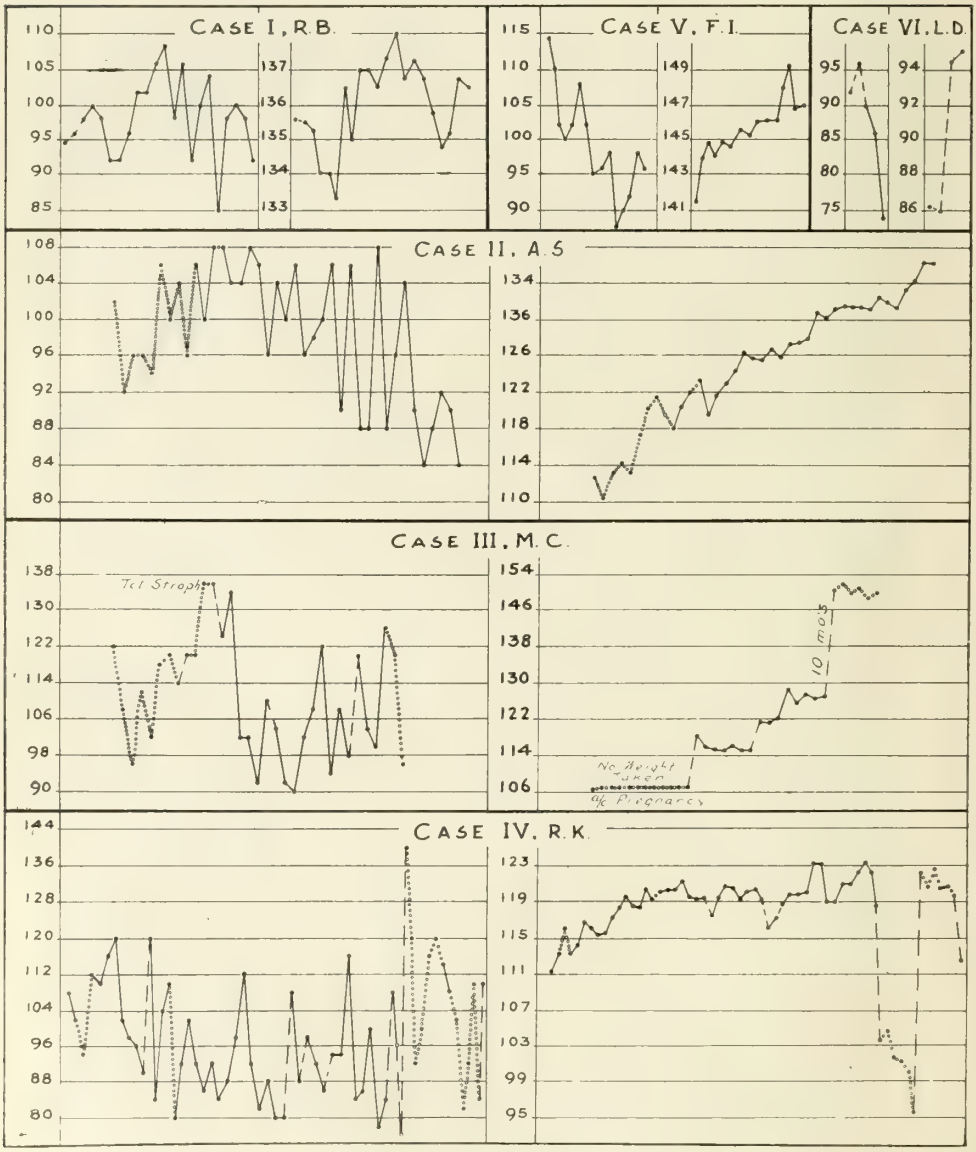
Continuous lines represent periods of liquid serum treatment.

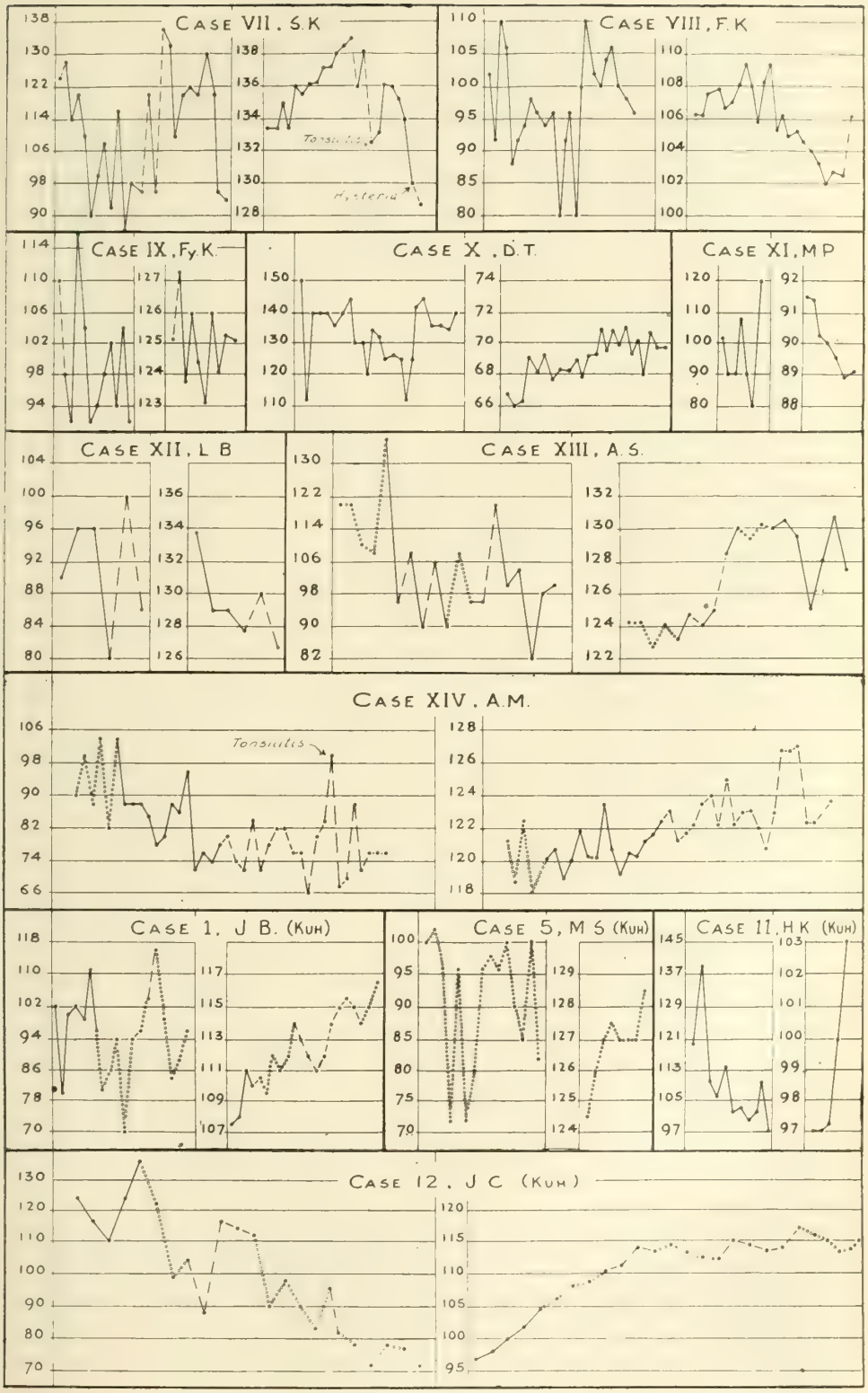
Dotted lines represent periods of desiccated serum treatment.

Broken or interrupted lines represent interruptions of treatment.

Left hand section of diagram for each case indicates the pulse readings.

Right hand section of diagram of each case indicates the weight readings.




Case VII. S.K
Tonsillitis
Hysteria
Case VIII, F.K
Case IX, Fy.K.
Case X. D.T.
Case XI, M.P
Case XII, L.B
Case XIII, A.S.
Case XIV. A.M.
Tonsillitis
Case 1. J.B. (Kuh)
Case 5, M.S (Kuh)
Case 11, H.K (Kuh)
Case 12. J.C (Kuh)

Mix, with exceptionally successful results. Erwin Stranski, in concluding his report, says that "antithyroidin seems at the present time to be at the pinnacle of the allied medications which have ultimately opened a pathway for the internal therapy of Basedow's, and that not only in its resemblance to the modern treatment of myxedema it rests upon a scientific basis, but also seems practically to excel all other internal and dietetic medications in efficiency, and so, maybe, many a case that seemed to fall within the range of surgery really belonged to internal medication." Waterman reports two cases cured, two improved and one unimproved. He thinks that either in this or in the cytotoxic serum we are to find a specific means of relieving the distressing symptoms of a most troublesome disease. Eulenberg, who introduced the gradually increased dosage of the serum, reports in nine cases out of ten favorable results. He adds that we must not allow ourselves to be intimidated by even relatively unfavorable reports, but to make further attempts with the serum therapy.

My experience in the treatment of exophthalmic goiter with the serum was in the capacity of associate to Sidney Kuh at the West Side Free Dispensary of the Jewish Aid Society. Through his instrumentality the serum of thyroidectomized horse was furnished by Parke, Davis & Co. for experimental purposes. I desire to express my appreciation to Dr. Kuh for the privilege and commend Parke, Davis & Co. for their cooperation. My observation extends over a period of more than four years, consists of fourteen cases, and in addition cites thirteen cases of Dr. Kuh.

My cases were all ambulatory and followed their usual occupations, with the exception of Case 2, and none received other medicines, except Case 8, who, in addition to the serum, was given iron, quinin and strychnin at times; and Case 2, for whom I prescribed formin, on several occasions, for bladder complaint. They were required to appear twice weekly, when pulse rate, temperature and weight were recorded, as great stress has been laid upon these physical signs on account of their accuracy. The other signs and subjective symptoms were inquired into at longer intervals. Interruptions in treatment were frequent, which tended to delay the approximation of dosage, upon which favorable results chiefly depend. The accelerated pulse of some patients at certain periods of presentation, as indicated on charts, is due to the overcrowded condition of the waiting room at our dispensary, which acted powerfully to excite the nervous systems and emotions of these patients.

The serum employed was obtained from horses, by drawing the blood from the jugular vein, two weeks after the removal of the thyroid gland, and allowing the clot to separate under favorable temperature. The method of administration was per mouth, and the dose ranged from 30 to 120 drops of the liquid or 15 to 60 grains of the desiccated serum daily.

Case 1.—Mrs. R. B., aged 54 years; treated irregularly; epileptic son and grandchild. Usual tonics for 5½ years, then serum for 5 months, 3 capsules gradually increased to 9 daily. Patient much better; symptoms subsided; tremor diminished; thyroid gland smaller; exophthalmos stationery; pulse and weight not materially influenced; relapse two years later.

Case 2.—A. S., aged 57 years; cigarmaker. Classical case. Usual therapy for seven years without benefit. Then serum, 60-120 drops daily (gradual increase). On maximum dose condition ameliorated; fourth day weight diminished about 2 pounds, then steadily rose; end of first two weeks pulse dropped to 92, then returned to former rate; temperature returned to normal after two months; after seven months feels perfectly well; sexual weakness for which he chiefly sought relief disappeared; palpitation, nervousness, etc., subsided; left lobe of thyroid smaller; circumference of neck reduced 1 inch; exophthalmos of left eye receded; right unchanged; pulse not above 90; weight increased about 24 pounds; month later discontinued treatment. Relapse eight months later.

Case 3.—Mrs. M. C., aged 28 years; under observation about 3½ years. Serum about ten weeks, 24-60 drops daily, gradually increased, weight not taken account gestation; pulse rate diminished first three weeks, then resumed rapid rate and subjective symptoms became aggravated. Year and a half later returned with pulse 124; weight, 118½ pounds; temperature, 99. Observation four weeks. Desiccated serum, 3 to 12 capsules daily; after first few days pulse increased and weight dropped, then pulse gradually dropped until 12 capsules (overdose) given, when pulse rose; weight decreased 3 pounds; temperature dropped to normal; nervousness and weakness diminished.

Returned seven months later. Pulse, 102; weight, 121¼ pounds. Desiccated serum 3-9 capsules; weight increased about seven pounds; no material change in pulse; never below 90 F.; weakness and nervousness diminished. Ten months later, another relapse. Serum, 60-90 drops daily; began to improve after five weeks, when treatment discontinued; pulse, 96; subjective symptoms relieved. Aggravated state during first period I attributed to pregnancy.

Case 4.—Mrs. R. K., aged 40 years; housewife. Classical case. Under observation four years. Liquid serum 60, gradually increased to 90 drops daily in one month, when pulse fell from 108 to 94 F.; weight increased about 5 pounds; subjective symptoms improved. During following four months pulse rate rose through interruption of treatment and hysterical spell. Pulse gradually fell to 80 in about five weeks, on resumption of serum therapy. During sixteen months following, pulse fluctuated between 80 and 100°, then reached normal point. Within three months after treatment commenced temperature dropped to normal and so remained. Other symptoms disappeared.

After six months' interruption, pulse 140; weight decreased fifteen pounds; mass in mammary gland; serum treatment about six weeks; pulse rate dropped but emaciation continued. Treatment discontinued about sixteen months, when liquid serum was again given for two months, irregularly; weight stationery; pulse rate dropped; symptoms ameliorated. After another lapse of six months symptoms aggravated and weight dropped 8 pounds. No treatment. Nine months later acute condition still continues; no treatment. This case improved repeatedly under treatment and became distinctly aggravated when same was discontinued.

Case 5.—Mrs. F. I., aged 30 years. Clinical syndrome. Under observation about 4 months; palpitation and nervousness ameliorated. After three months declined; weight increased; temperature fell to and remained normal; subjective symptoms disappeared; patient feels perfectly well. About three years later, reported feeling well.

Case 6.—Mrs. L. D., aged 22 years. Observation, eight calls during period of eight months. For six months, usual tonics; pulse ranged between 90-96; weight at end of period, 91½ pounds. Desiccated serum then given, 3 capsules daily. One week later pulse declined (for first time) to 74 and weight rose to nearly 96 pounds. It is regrettable that patient never returned, apparently responding so quickly to serum therapy.

Case 7.—Miss S. K., aged 18 years; neurotic heredity. Usual tonics at first, then serum. Pulse gradually fell, weight increasing 3 to 6 pounds in about four months; symptoms ameliorated. Lapse of eighteen days (met with accident). After about three months pulse dropped to 96; weight to 130¼ pounds. Better results might have been obtained but for an acute attack of influenza and accident mentioned.

Case 8.—Miss F. K. (sister Case 7), aged 20 years; under observation ten months. I. Q. & S. and desiccated serum, 3-9 capsules daily. Subjective symptoms improved; pulse and weight unchanged.

Case 9.—Fanny K., aged 23 years; under observation three months. Desiccated serum, 3-8 capsules daily. Pulse weight and general condition unchanged.

Case 10.—D. T., schoolgirl, aged 13 years; father neurotic; mother exophthalmic goiter. Typical case. Three capsules increased within two months to 10 daily; pulse fell from 150 to 112; weight rose 3¼ pounds; temperature always above normal; palpitation and nervousness ameliorated. After three months' treatment had acute tonsillitis with relapse of tachycardia, continuing about three weeks, when observation ceased.

Case 11.—M. P., schoolgirl, aged 15 years; under observation three weeks. Desiccated serum, 3-12 capsules daily. Pulse (except once, due to excitement) 90, until administration of 12 capsules (overdose), when it rose to 120; weight stationary; nervousness diminished. Treatment was brief, but reduction of pulse rate and improved condition of symptoms, with proper dosage, is significant.

Case 12.—Mr. L. B., clerk, aged 35 years; married, 5 children; neurotic parents. Acute case, too brief to be of interest. Observation of two weeks; interruption of two weeks, and one examination thereafter. However, the decrease of 10 beats in heart's action after two weeks' treatment, and increase of 20 beats after interruption noted, indicates a favorable influence of the serum over the heart.

Case 13.—Mrs. A. S., aged 24 years; two children; mother and brother nervous; cousin has goiter. Usual tonics prescribed. Patient interrupts for ten months, when serum, 60, gradually increased to 90 drops daily within three weeks, was given. Pulse dropped 12 beats; weight unchanged, except after the first four days, when it fell about 2 pounds. Treatment then interrupted, pulse rising to 136; weight diminished 1 pound. Six capsules (desiccated) now prescribed. After repeated interruptions, aggregating nine weeks, liquid serum administered seven weeks. Pulse fluctuated between 90 and 108; weight steadily rose to 130½ pounds. Patient feels much better while taking serum, and regrets that domestic duties oblige her to interrupt treatment.

Case 14.—Mr. A. M., aged 28 years; married, one child; brother under my observation for exophthalmic goiter. Forty-five drops liquid serum increased within two weeks to 90 drops daily; desiccated serum then given, 3 capsules increased to 8 daily within two months. Ninety drops or 8 capsules (overdose) aggravated condition. All subjective symptoms disappeared; pulse normal; weight increased 8 pounds; circumference of neck diminished one-half inch; gland hard, like cystic goiter. Year later, found him normal.

Following are thirteen cases under observation by Dr. Kuh, since his report of March 30, 1905.

Case 1.—Continuation of Case 2 of former report. Observation fourteen months. Patient felt perfectly well in every way.

Case 2.—Continuation of Case 1 of former report. Died from tuberculosis.

Case 3.—Mrs. S. E. G., aged 32 years; June 10, 1906; family of exophthalmic goiter; classical case. Had taken up to 15 drops of serum (Merck) without benefit. Serum, 60-120 drops daily, with marked improvement within three or four days; has gained about 20 pounds in weight.

Case 4.—Miss S. M., aged 43 years; family neurotic; several cases of goiter simplex. Nov. 9, 1908, pulse 120 (irregular). Serum, 30-48 drops daily. Nov. 12, 1908, pulse 76, regular, good in quality. Serum taken irregularly account nausea; refused to continue its use.

Case 5.—Mrs. M. S., aged 24 years; typical case; several members of family had exophthalmic goiter; brother improved under serum treatment. Under treatment five weeks. Began Sept. 13, 1908. Oct. 23, 1908, family physician reports "feels better than any month for five or six months." Since died from tubercular meningitis.

Case 6.—Mr. W. W. V., aged 44 years; art dealer; brother has exophthalmic goiter; Oct. 12, 1908, ordered serum 30-60 drops daily; October 28, 1908, distinctly less exophthalmos; symptoms ameliorated; pulse 80. Dec. 1, 1908, still under treatment, serum 120 drops daily.

Case 7.—Miss R. M., aged 25 years; nervous; epileptic brother. Under serum treatment up to 42 drops. All evidences of exophthalmic goiter disappeared; pulse normal; gained some in weight.

Case 8.—Man, aged 24 years; operated on two years ago for exophthalmic goiter; temporarily improved, but pulse never dropped below 100. Shortly before examination suddenly became worse. Serum, 50 drops daily, had no effect.

Case 9.—Married woman, aged 45 years; serum up to 120 drops daily had no effect. Husband (a physician) reports: Thyroidectomy, performed later, improved condition but did not cure.

Case 10.—Mrs. G. L., aged 25 years; neurotic family. Aug. 8, 1904, serum of goat, 15-20 drops. Dec. 27, 1908, reported by her family physician to have recovered.

Case 11.—Miss H. K., aged 18 years. May 3, 1905, thyroidectin capsules t. i. d. Aug. 11, 1905, symptoms improved; menses returned.

Case 12.—J. C., aged 16 years; schoolgirl. Mother neurotic; brother, slight goiter; brother, chorea. Feb. 27, 1908, at Rush Dispensary; desiccated serum, 2 capsules daily. Dec. 5, 1908, feels perfectly well; some tremor of hands; goiter still present; movements of eyelids still jerky; weakness of accommodation disappeared.

Case 13.—Mrs. M. S., aged 24 years; housewife; family nervous. Dec. 6, 1906, antithyroidin, 30-60 drops daily. March 7, 1907, pulse 78; menses less troublesome; "never felt so well in six years." April 3, 1907, still under treatment, 60 drops daily.

To summarize my remarks, I will state that my experience was not sufficiently extensive to enable me to declare myself definitely upon the use and effect of serum treatment. To arrive at an exact conclusion the serum must first be clinically tested on a larger scale and with more precision.

Theoretically the action of the serum is not to inhibit directly the hyper- or perverted secretion of the thyroid gland, and therefore it would be illogical to attribute to it unqualified remedial value. I believe it does not possess the superior quality which is credited to thyroid extract in myxedema. My opinion is, however, that this serum is the most valuable drug as yet offered. In most cases the usual mode of life need not be discontinued, which is an important factor among poor patients.

In most cases nearly the whole symptom-complex is ameliorated. The subjective symptoms subside. The tremor and nervousness diminish, and the nutritional disturbance is markedly lessened. In some cases the

thyroid gland is reduced in size and occasionally the exophthalmos recedes. The tachycardia, which, according to Moebius, is the fatal symptom, is reduced more promptly and effectively with the serum than with any other therapeutic agent.

Taking the fourteen cases under my observation as a basis for computation, the ailment did not recur in Cases 5 and 14 after a lapse of several years, equaling 14.3 per cent. Marked improvement resulted in 42.8 per cent. Slight improvement in 35.6 per cent. In one case, or 7.1 per cent., there was no response to treatment. After treatment had ceased relapses occurred in Cases 1, 2, 3, 4 and 13 after periods of nine, eight and, in the last three, six months, respectively. These figures seem to indicate that the serum has an accumulative action like iodothyrin and, in order to secure permanent relief, should be administered at intervals.

It is interesting to note that after the first few days of serum treatment the pulse rate increased in Cases 1, 3, 10, 12 and 14 and the weight decreased in Cases 2, 8, 10, 13 and 14. This peculiarity in the action of the serum has been pointed out by two other clinicians.

To secure favorable results it is essential to reach and maintain a point of neutralization and then approximate the dosage in each case, for the reason that small doses have no marked beneficial effect, while an excessive quantity aggravates the condition. There is no standard dose. The usual maximum dose administered in this series of cases consisted of 120 drops of the liquid or 60 grains of the desiccated serum. This large dosage creates a difficulty in its use among the poor owing to its exorbitant cost.

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ORGANOTHERAPY: HISTORICAL REVIEW AND CRITIQUE.*

ALFRED C. CROFTAN, M.D.
CHICAGO

I should like to have it understood that the preliminary remarks that I offer in this symposium are merely introductory to the more important papers that are to follow. What I have to say comprises merely general principles. The description of the few facts that we possess has been allotted to others.

There is little that is pleasing in the past of organotherapy; the present offers only scanty satisfaction from a practical standpoint. The history of organotherapy, like the history of every other chapter in therapeutics, begins with a jumble of obscurities, passes through a labyrinth of semi-mystic, obscure vagaries to a clearer elevation whence lead several promising paths onward. Organotherapy originated in the crudest empiricism. Everything was tried, and the more bizarre the product the greater the efficacy postulated for it. Premonitions of the homeopathic law of similars are discoverable early; head preparations for headache; heart extract for heart disease; stomach contents, stools for digestive disturbances; kidney extracts for renal difficulties, *et id omne genus.* Often will be encountered the peculiar perversions of logic illustrated more clearly in the gastronomic field, viz.: Nightingales' tongues are hailed by the Roman epicures as a delicacy, for what produces a beautiful sound should produce a pleasant taste; powdered pearls are recommended as a flavor, for what is pleasing to the eye should be pleasing to the palate. What was difficult to secure in those early days from dead human beings or decaying animals, what was especially disgusting, putrid, nauseating; all that was endowed with healing virtues in equally disgusting, nauseating diseases, as mysterious as the products used to combat them.

The "Papyrus Ebers," the oldest existing medical manuscript, described a variety of remedies derived from human and animal bodies. Through the writings of Homer, Aretaeus, Democritus, Dioscorides, Galen, and many of the medieval authors, Guido de Chauliac, Burton (in his "Anatomy of Melancholy"), John Hunter, will be found references to organotherapy. Interesting preparations are recommended in the "New London Dispensatory" of 1677, where reference is made to *tinctura cranii, essentia cranii humanis, spiritus cerebri humani* for "debility;" *cor hominis,* powdered, for epilepsy, and many other similarly absurd and bizarre products.

Organotherapy, however, never acquired popularity, never attained to the dignity of a therapeutic system, until the publication by Brown-Séquard, in 1869, of his experiments with testicular extract (suc testiculare) and his formulation of the therapeutic effect of "internal secretions." Coming from so eminent and conservative an authority, proclaiming the most startling results secured upon his own person, viz., "a return of vital energy and rejuvenescence with renewed and efficient

* Read in a Symposium on Organotherapy before the Chicago Medical Society, Dec. 8, 1909.

peristalsis and control over the bladder and sphincter," it is not to be wondered at that the organotherapeutic method at once advanced into prominence. Add to this the sensational character of the claims advanced, amounting to nothing less than the restoration of youthful functions, of sexual potency, the arrest of senility, the discovery in other words of the "fountain of youth," and we can very well understand the hysterical acclaim that greeted this *soi-disant* discovery of Brown-Séquard in France. We have had a similar experience recently with the claims of Metchnikoff. While practically nothing of value has come from orchitic therapy (we will hear more of this in the paper by Dr. Schmauch), still an immense stimulus was given to this form of investigation, with the result that we have to-day a small number of exceedingly valuable additions to our therapeutic armamentarium, and above all a working theory that if logically pursued, carefully controlled and honestly founded on facts that are capable of full clinical verification, promises to lead to big things in the near future.

It is manifestly a precarious and an unscientific procedure to introduce substances of uncertain composition and unknown properties into a sick organism without first determining their effect on the healthy body. Before organotherapy could be raised above the level of raw empiricism and could attain the dignity of a rational system of treatment, the power of organ extracts to influence physiological processes had to be studied. This problem was approached in two ways, viz.: On the one hand, different animal preparations were administered to normal animals or human subjects and the effects determined; on the other hand, different organs (chiefly ductless glands) were removed and the perversions of function that followed established. The knowledge, moreover, obtained from operative ablation of organs was in many instances supplemented by clinical observations on human subjects in whom spontaneous degeneration or atrophy of these organs had occurred. Organotherapy was finally rendered still more exact by the discovery and isolation of "active principles" that possessed all the specific properties of the organs from which they were derived, and that could in some instances be advantageously administered in the place of the crude extracts.

Whatever may be accomplished in the future with organotherapy must be based upon still more accurate physiologic knowledge than we possess to-day. This line of research is among the most fascinating and offers the greatest promise of important discovery. Notable advances have been made in many directions, but the work has been very disconnected and shows a deplorable lack of systematic progression and concentrated effort. Much that has been found owes its discovery to chance, to random trying, often actually to errors in technic; I refer as an illustration of the last to the knowledge we have acquired from surgical accidents in thyroidectomy of the rôle of the parathyroids in the pathogenesis of tetany.

A comprehensive and complete investigation of the physiology of the glands furnishing "internal secretions," singly and in concatenation,

must proceed along the following lines; simple preliminary steps in the right direction having already been taken.

A gland, we will say, the pancreas, must be removed in its entirety and the effect of this ablation determined. In a second series of experiments extracts of the gland must be introduced into a healthy organism of the same species, or, if possible, the gland or portions of the gland must be ingrafted and again these effects studied. Finally, after ablation of the gland, extracts must be injected or grafts made in the same animal and these effects studied. This should yield definite information in regard to the effect (1) of the absence of an internal secretion; (2) of the administration of an internal secretion in excess; (3) of the power of an internal secretion to replace a removed gland or to act as a substitute when it is absent or its secretory function deficient. This is the first step; all available information should be similarly secured for each of the ductless glands singly, for the adrenals, the thyroid, the spleen, the ovaries, etc.

The next step must concern itself with identically similar studies with two glands. To illustrate: A study of the pancreas, we will say, and the adrenals implies (1) removal of the pancreas—injection of pancreas, injection of adrenals; (2) removal of adrenals—injection of pancreas, injection of adrenals; (3) removal both of pancreas and adrenals —injection of pancreas, injection of adrenals, injection of adrenals plus pancreas.

The third step comprises the study of three glands, for instance, pancreas, adrenals, thyroid. It is unnecessary to specify the various possible combinations that must be studied. They are very numerous and we can outline the course of such a triple or quadruple or multiple study according to simple mathematical laws of transmutation and commutation.

One would have to include in this study such organs as liver, muscle, lymph glands, etc., the complete removal of which is not compatible with life. Here the investigation would become less exact and approximate results only could be expected. The whole investigation, however, would partake of the character of a descriptive analysis. One should proceed without preconceived ideas, without expectation of prescribed results, without reliance upon *a priori* conclusions or analogies. Only in this way can the truth be arrived at. There will be immense technical difficulties to be surmounted; the studies will have to comprise the whole range of the manifold functions of the body and their perversions, will have to deal most explicitly with the intricate mechanism of the intermediary metabolism. But the immense task, best carried out as a collective investigation by many observers, for the lifetime of one investigator could not suffice to accomplish it, would be very much worth while. It would be the only reliable fundament for organotherapeutic endeavor, as soon, namely, as the facts discovered relative to the healthy organism could be applied equally systematically to the body diseased.

To this day, owing to our inadequate preliminary knowledge, the therapeutic efficacy of organ injection and organ ablation is limited.

With the exception of ovarian therapy in disorders of the menopause (natural or induced), of thyroid therapy in myxedema or athyroidism and in a definite class of simple goiters (where thyroid therapy constitutes a "rest cure," I imagine, for an overtaxed gland enabling it to gradually "exercise" up to the demands made upon it), with the exception, furthermore, of suprarenal therapy in cases where local vasoconstriction or a general rise in blood-pressure is desired, the achievements of gland therapy are very scanty.

Spleen, lymph glands and bone-marrow (collectively the blood-forming organs) have been used extensively in blood diseases with results that are quite ambiguous. A polynuclear leucocytosis seems to be the main effect due, no doubt, to the large amount of nuclein that these tissues contain. No specific action has so far been discovered.

Nervous tissues employed in various psychoses, functional or organic nervous diseases, seem to produce no determinable effect as soon as the large element of suggestion is ruled out. Much work has recently been done with extracts from kidneys in nephritis and uremia, with liver extracts in uremia and hepatic insufficiency; this field is promising, but nothing of a positive character has so far been discovered that would warrant the use of these preparations in the treatment of these diseases.

Pancreas and its preparations have also been found quite ineffective in diabetes, although here theoretically, at least, was every reason to expect results. Experiments with pancreas-muscle extracts seemed to demonstrate the power of the latter to reduce the sugar excretion. I even became so far convinced of the efficacy of such extracts in influencing diabetic glycosuria that I published a preliminary report on this therapy several years ago; numerous quite negative results obtained since that time have, however, forced me to recede from the belief originally maintained. That pancreas is, of course, effective in replacing deficient external secretion of the gland in obstructive or obliterative disorders of the pancreas or its channels is self-evident; this, like the use of bile or bile-acids in hepatic disease, is certainly a form of organotherapy, and a very useful one, but not properly germane to the aspect of the subject under discussion to-night.

So far, then, the field belongs rather to the metaphysician than the physician, to the dreamer rather than the logician. Some remarkably ingenious webs of hypothesis have been woven around and about this subject. However fascinating and seductive, even convincing, they appear, they have so far not attained the dignity of a safe working theory. The most extended flight into this realm has been made by the guest of the evening, Dr. Sajous, and he deserves an immense amount of credit for the industry and talent he has displayed in weaving the many floating filaments of disconnected facts into a delicate veil that effectively conceals our ignorance.

100 State Street.

ADRENAL THERAPY.*

CHARLES E. DE M. SAJOUS, M.D., LL.D.
Professor of Therapeutics and Pharmacology in Temple University.
PHILADELPHIA.

To make it possible to define with any degree of scientific accuracy the therapeutic use of adrenal preparations, the actual purpose or function of the adrenal secretion in the organism should be known. Oliver and Schäfer have shown that this secretion, as represented by adrenal extracts, raises the blood-pressure by increasing the tone of the vascular and cardiac muscles, but this familiar effect can no more be considered as the function of the adrenals than the production of glycosuria or arterial sclerosis by injections of adrenalin can be deemed such. Indeed, many other effects traceable directly to the adrenals have not been, so far, submitted to analysis. Oliver and Schäfer,[1] Reichert,[2] Morel,[3] Lépine[4] and others, for instance, have observed that adrenal preparations caused a rise of temperature. As is well known also, excessive adrenal tissue development, such as hypernephroma and interstitial adrenal hemorrhage, may cause a rise of temperature quite sufficient at times to constitute a veritable hyperpyrexia.

The influence of the adrenals on metabolism is another phenomenon which physiologists have failed to explain. The rise of temperature produced by adrenal extractives was found by Reichert[5] to coincide with increased metabolic activity. The controlling power of the adrenals themselves is likewise strikingly shown in malignant adrenal hypernephroma by the physical overgrowth it may cause, a child of 5 years attaining, in some instances, that of one of 16 years, and showing, by its excessive appetite and other phenomena that its cellular exchanges are being carried on at an inordinate rate. In fact, Otto, Marchand and others pointed out nearly two decades ago that simple hyperplasia of the adrenals caused premature development.

Even the oldest coherent syndrome of adrenal origin, Addison's disease, stands before us as a mere catalogue of effects. We know that in virtue of the gradual loss of adrenal functions there appear, in more or less rapid succession: Asthenia, profound lassitude, digestive disturbances, dyspnea, hurried and irregular action of the heart, anorexia, emaciation, bronzing, hypothermia, coldness of the surface and, finally, as the precursors of death, delirium, coma and convulsions. These effects of gradual annihilation of the adrenals, through destruction of their parenchyma or of their nerve paths, have remained quite as obscure as to the manner in which they are produced and the function of the adrenals of which they denote the gradual extinction, as the phenomena of overactivity just reviewed.

It is plain that under these conditions it is impossible to analyze intelligently the therapeutic use of adrenal preparations, and it is because of this that I am obliged to treat the question from the stand-

* Read in a Symposium on Organotherapy before the Chicago Medical Society, Dec. 8, 1909.

point of my own researches. I may add, however, that materially as my interpretation of the rôle of the adrenals in the economy differs from that of all other investigators, it explains the phenomena, experimental and clinical, they have all recorded, besides accounting for those to which they had not devoted their attention.

In 1903 I advanced the view that it was the adrenals which supplied the internal secretion that various physiologists, especially Bohr, had deemed necessary to account for the absorption of oxygen from the pulmonary air. Referring elsewhere[6] for the complete chain of evidence in support of these facts, I will merely recall that while the adrenal secretion is endowed with a powerful affinity for oxygen, it can be traced at every step from the interior of the adrenals to the pulmonary air-cells to be taken up by the hemoglobin molecule, and that it represents therein a constituent which physiologists had long recognized, but the identity and origin of which they had not shown.

The biochemic evidence all points to the correctness of this interpretation, even to the presence of the adrenal principle in the red corpuscles as a constituent of their hemoglobin, which has been recently furnished by Mulon, of Paris. The presence of the adrenal product in the hemoglobin, the blood plasma, the milk, the tissues, various secretions, the placental blood, the bronze patches of Addison's disease, further indicates that the adrenal principle is distributed to all parts of the organism and that the adrenal secretion is related with a general function besides that of pulmonary respiration, i. e., tissue respiration or metabolism. This is quite in keeping with Howell's statement[7] that "the physiologic oxidations of the body cannot be separated from the general metabolic phenomena of the tissues."

On the whole, the adrenals carry on functions of the first order in the organism, from my viewpoint: *They are the source of the constituent of hemoglobin which takes up the oxygen from the pulmonary air, to carry it to the tissues and sustain general oxidation therein, and also, therefore, metabolism and nutrition.*

If this brief outline of the purpose of the adrenals is clearly apprehended, the many physiologic, pathologic and pharmacologic phenomena attributed to them or their preparations can be readily accounted for and explained. The rise of temperature noted by Schäfer, Reichert, Lépine and others after the use of adrenal extract, is a normal outcome of the increased tissue oxidation it causes. The coincidence of the rise of temperature with increased metabolic activity noted by Reichert, is also readily explained, since oxidation and metabolism are inseparable processes. The familiar rise of blood-pressure is itself but an expression of enhanced metabolism in the vascular muscles by direct and indirect action of the adrenal principle, the resulting contraction of the vessels being the cause of the rise of blood-pressure. While the slowing of the heart's action is the normal outcome of the increased resistance offered by the blood column, compensation is provided for by the increased vigor of cardiac contractions, caused in part by the increased metabolic activity of which the heart muscle is also the seat.

As to the various pathologic conditions of the adrenals enumerated, we can understand why hyperplasia of these organs, or the excess of adrenal tissue which constitutes hypernephroma can, by enhancing inordinately their functional activity, raise markedly the temperature, and even provoke the hyperpyrexia occasionally observed. The influence of the adrenals on metabolism and nutrition also accounts for the surprising overgrowth and premature development in children afflicted with malignant hypernephroma, a condition in which the adrenal tissue is greatly and sometimes enormously in excess.

Conversely, we have in Addison's disease, with this conception of the physiologic function of the adrenals before us, a typical example of gradual cessation of the vital functions, oxidation, metabolism and nutrition. The progressive muscular weakness and asthenia betoken pointedly lowered metabolism, while the hypothermia as clearly indicates reduced oxidation, and the emaciation inadequate nutrition. So great is the vital process *per se* undermined, in fact, that, as observed by Rolleston,[8] these cases sometimes emit a cadaverous odor. The bronzing itself testifies in this direction, since it denotes increasing loss of tone of the precapillary arteries, in keeping with a similar condition of the entire arterial system, and stagnation of the blood-plasma in the cutaneous capillaries. Indeed, Boinet[9] and Mühlmann[10] have shown that the bronze pigment actually consists of the adrenal product, which becomes brown or even black on exposure to the air.

All the phenomena that follow extirpation of both adrenals also become self-evident. The temperature steadily recedes, evidence that general oxygenation is progressively decreasing; the blood-pressure is gradually lowered, in keeping both with the cardiac pulsations which become almost imperceptible, and with the general muscular weakness which becomes such that the animal can no longer stand. These phenomena clearly emphasize the interrelationship that exists between oxygenation and tissue metabolism, arrest of the one involving cessation of the other. The frequent though shallow respirations and the cyanosis afford indirect evidence of gradual respiratory failure, while the rapid onset of coma, sometimes lapsing into convulsions, soon followed by death, exemplifies the all-important utility of the adrenals in the vital process.

With this conception of the physiologic purpose of the adrenals before us, it becomes possible, it seems to me, to interpret the therapeutic application of adrenal preparations rationally, that is to say, with a more precise understanding of their mode of action than heretofore. The disorders in which adrenal preparations are indicated can be divided into four general classes: 1, Those in which they compensate for functional incompetence of the adrenals; 2, those in which they restore the cardiovascular equilibrium; 3, those in which they restore the respiratory equilibrium in the lungs and tissues, i. e., the vital process itself; 4, those in which they promote the efficiency of the immunizing process.

Diseases in which adrenal preparations compensate for functional incompetence of the adrenals. The disorder which stands foremost in

this connection is, of course, Addison's disease. The history of the therapeutic use of adrenal preparations, to which I will add grafting of adrenal tissue, illustrates clearly the disadvantages, nay the dangers, of the tentative use of any remedy without a clearly defined conception of its physiologic action. Out of 120 cases treated by means of adrenal preparations or grafting found in literature, about 40 per cent. showed a little or no improvement, 30 per cent. were markedly improved, and 20 per cent. obtained permanent benefit, up to the time at least the reports were made. This is not a bad showing for any remedial agent; but could we not, with the functions of the adrenals as I have outlined them, hope to increase the proportion of the recoveries? Suggestive in this connection is the fact that with the adrenals as the primary organs in oxygenation and metabolism, the cause of the deaths that have occurred under the use of adrenal preparations or grafting can be clearly recognized and therefore guarded against in the future. Courmont,[11] for example, refers to "formidable hyperthermia" and prompt death after grafting dog's adrenals in advanced cases of Addison's disease. When we recall that Schäfer,[12] judging from the action of adrenal preparations on the blood-pressure, states that "in order to produce a maximal effect, a dose of not more than fourteen millionths of a grain of the active material per kilo of body-weight is all that is necessary," we can readily understand, in the light of my views, how the products of two entire fresh adrenals grafted into the tissues could produce the "formidable" rise of temperature observed, and death.

The lesson to be derived from these lamentable instances is that the quantity of adrenal substance grafted or the dose of adrenal preparation administered must be carefully adjusted to the needs of *each* patient. This is further emphasized by the fact that the extent to which the adrenals are destroyed, or are rendered insufficient through disease of their extrinsic nerves, varies with each case, a mere vestige of adrenal tissue sustaining the general oxidations in the one, while considerable adrenal tissue is still functionally active in the other. Extremes in this connection are well shown in two of the cases that were materially benefited: in one of these, reported by Bate,[13] but 1/12 grain (0.005 gm.) of adrenal extract thrice daily sufficed; in the other, reported by Suckling,[14] a daily dose of 10 grains (0.65 gm.) had gradually to be increased until 175 grains (11.4 gms.) were given daily. On the whole, the one great fact emphasized is that adrenal preparations should never be used empirically in Addison's disease, and that in view of the direct rôle the adrenals play in the oxidation processes, the *temperature* of the patient, with his blood-pressure as control (we have seen that they run parallel), should be taken as guide. Inadequate action of the adrenals occurs in other diseases, to which reference will be made in a subsequent heading.

Diseases in which adrenal preparations enhance the cardiovascular equilibrium, and metabolism. Kothe,[15] Rothschild,[16] Crile[17] and others have obtained prompt recovery (after all other means had failed in Kothe's cases) in surgical heart failure from intravenous injection of adrenalin in saline solution. Mankowsky,[18] Bates,[19] Floersheim,[20] Deeks[21]

and Boy-Teissier[22] have urged the value of adrenal preparations in cardiac disorders accompanied by weakness, particularly when there is dilatation, cyanosis or edema. Here, two distinct, though concurrent and mutually helpful, effects of the adrenal principle prevail in so far as the heart is concerned.

In 1853 Brown-Séquard[23] found that the venous blood of the venæ cavæ contained some substance which contributed to the contractions of the heart. A contemporary promptly relegated this experimental fact to oblivion by showing that carbonic acid, the only excitant credited to venous blood, failed to cause an exposed heart to contract. Had it not been for this misdirected experiment and the readiness with which physiologists accepted the experimenter's verdict, it is probable that Brown-Séquard over fifty years before Oliver and Schäfer would have discovered that, in Schäfer's words,[24] the adrenal extract produced "a powerful physiologic action upon the muscular system in general, but especially upon the muscular walls of the blood-vessels, and the muscular wall of the heart." He would, then, moreover, have reached the obvious conclusion to which I was subsequently led, that inasmuch as the adrenal secretion passed by way of the adrenal veins to the inferior vena cava, it was inevitably carried to the right heart in the blood of this great channel, and that it was the adrenal secretion, therefore, which helped the heart to contract.

This explains the beneficial influence of adrenal preparations in heart failure and in chronic heart disorders of an adynamic type. Their active principle ultimately reaches the venæ cavæ and excites *directly* the muscular elements of the right heart. Beside this, however, the entire cardiac muscle is also, from my viewpoint, excited *indirectly*. The adrenal active principle being carried by the venous blood from the heart to the pulmonary air-cells, it is added to that already in the blood, and becomes converted into the albuminous constituent of hemoglobin, which, as we have seen, sustains oxidation. In this form it returns from the lungs to the left ventricle, with the arterial blood it has enriched, to be distributed to the body at large. When we recall that the first arteries given off by the aorta are the coronaries, whose branches supply the heart muscle proper, it becomes evident that the entire heart is the first to receive blood freshly laden with oxygen. On the whole, the adrenal secretion itself contributes to the heart's working power in two ways: 1, By enhancing directly the contractile power of its right ventricle, and 2, by sustaining oxidation and metabolism of the entire cardiac muscles.

Emphasis must be laid upon an important practical fact in this connection, namely, that the obvious purpose of the direct aid the right ventricle receives from the adrenal secretion is to assist the walls of this ventricle in projecting the venous blood into the lungs. This explains the rapidity with which cardiac dyspnea is relieved by adrenal preparations; they not only restore to the right ventricle its power to drive the venous blood adequately to the air-cells, but they supply it with the pabulum which enables it to absorb from the air enough oxygen to restore the general respiratory equilibrium. The increased metabolic activity in

the vascular muscles being also enhanced, passive edema is also caused to disappear, while the dilated heart tends to resume its normal dimensions.

The asthma of cardiovascular adynamia often met in elderly subjects is promptly relieved in the manner just described, but this applies also to true asthma, as shown by S. Solis-Cohen.[25] This result is explained, from my viewpoint, not only by the increased oxygen intake and the improved tissue oxidation just mentioned, but also by the more perfect hydrolysis of the toxic wastes to which the spasm of the bronchial muscles, and therefore the asthmatic paroxysms, are due.

Diseases in which adrenal preparations restore the respiratory equilibrium in the lungs and tissues, i. e., the vital process itself. This refers mainly to an important feature of the problem, to-wit, the participation of the whole organism in the improved oxygenation. The prompt arrest of a paroxysm of asthma by the hypodermic injection of five to ten drops of the 1/1,000 solution of adrenalin chlorid, for example, has been termed "inexplicable" and "marvelous;" but if the adrenal principle is considered as the active factor in general oxidation, and it is recalled that according to Takamine, one two-hundred thousandth of a grain of adrenalin (and this applies as well to other adrenal principles, such as suprarenalin, epinephrin, etc.) suffices to awaken physiologic action, one can readily understand why many times this dose will produce therapeutic effects. Especially does this assert itself when we take into account a fact I have long urged, to-wit, that we must look upon the active principle of the adrenal secretion, not merely as a reducing agent, but as a catalyzer, which, though remaining itself stable, can take up oxygen and transfer it with extreme rapidity and in relatively enormous quantities, to the hemoglobin, and from this compound to the tissue cells. The adrenal active principle has not only been found in the red corpuscles by Mulon, as we have seen, but its catalytic action, first pointed out by Poehl, meets precisely the conditions deemed necessary by Moritz Traube in 1858, to explain the massing of oxygen in the tissue-cells necessary to normal metabolism. The prompt relief afforded by the adrenal active principle in asthma is thus due mainly to the fact that it suddenly and greatly increases not only the oxygen intake, but also the oxygen supplied to the tissue-cells through its all-powerful catalytic action.

Though apparently remote, pathogenically, from the disorders just reviewed, shock offers an example of a disorder in which the adrenal principle restores both the cardiovascular and the vital equilibrium. Crile,[26] as is well known, kept a decapitated dog alive ten and a half hours by the slow intravenous injection of a 1 to 50,000 or 100,000 solution of adrenalin in saline solution, but this can hardly be ascribed solely to the action of the adrenal extractive upon the blood-vessels, as is generally believed, since the same investigator resuscitated animals fifteen minutes after death by the same treatment. Can we consistently conclude that it was merely by enhancing the tone and contractile power of the cardiovascular muscles in these animals that life was restored? The process assumes a more logical aspect when we consider the adrenal principle besides the cardiovascular stimulant it is known to be, as the con-

stituent of hemoglobin which sustains oxidation and metabolism in the organism at large. As such it played a direct part in restoring life itself in the tissues. Administered in warm saline solution, the animals actually received, as regards their biodynamism, what amounted virtually to artificial blood, and their tissue cells, including the cardiovascular muscles, were able to resume their functional activity.

This accounts also for the beneficial action noted by various observers in disorders due to functional exhaustion, especially neurasthenia, and in trophic disorders of the skeleton, such as osteomalacia and rachitis, since the nutrition of all kinds of tissue is enhanced. Intimately connected with the catalytic action just mentioned are the local effects of adrenal extractives, such as suprarenalin, adrenalin, etc., in the nose, the eye, the urethra, etc. When the active principle is applied to a mucous membrane, it awakens through this property violent metabolic activity and contraction, not only in its cellular elements, but also in the muscular coats of its arterioles. These minute vessels are constricted so violently that their lumina are practically obliterated, thus preventing the entrance of arterial blood into the already contracted tissues, and causing the familiar blanching. Its action in arresting the various forms of hemorrhage, epistaxis, hematemesis, etc., where it can reach directly the bleeding surface, is thus clearly accounted for.

A kindred action is that observed in hemoptysis, which has been treated successfully with adrenalin by a few clinicians after the usual remedies had failed. The oral use of any adrenal principle is at best uncertain. Others have reported successful results from the internal use of adrenal extract, 5 grains frequently repeated. The use of adrenal preparations in hemoptysis appears dangerous, however, owing to the intense rise of blood-pressure they cause. They should be tried only, therefore, after the classic measures fail, eight to ten drops of the 1 to 1,000 adrenalin solution in a dram of saline solution being given subcutaneously.

Diseases in which adrenal preparations promote the efficiency of the immunizing process. This phase of the physiologic action of adrenal preparations is represented by their influence on infectious diseases. Abelous and Langlois pointed out in 1891 that the adrenals neutralized or destroyed toxic products of muscular metabolism, while Charrin, Wybaux[27] and others have urged the protective rôle which the adrenals fulfill in general infections. My own investigations have not only sustained these conclusions, but they have shown that when, after passing the pulmonary air-cells, the adrenal secretion becomes the oxidizing ferment of hemoglobin, it combines with the thyro-parathyroid secretion and a tryptic ferment of pancreatic origin to form the familiar immunizing constituents of the blood. When, therefore, we add an adrenal active principle to the blood, we increase directly its immunizing activity. We also increase it indirectly, for inasmuch as it enhances oxidation and metabolism in all tissues, it does likewise in the structures which produce immunizing bodies.

This accounts, from my viewpoint, for the marked reduction in the mortality obtained by Hoddick[28] in cases of peritonitis following appendi-

citis, accompanied by uncontrollable decline of the blood-pressure, cyanosis and other evidences of collapse, and also in puerperal toxemias, by the slow intravenous use of adrenalin in saline solution. Hoddick ascribes the lowering of the blood-pressure to paralysis of the vasomotor center; but as the toxemia is the cause of this condition, an agent capable of counteracting both cause and effect is necessary. This is met by the adrenal principle. The influence of the saline solution in these cases must not be overlooked, however. Seven years ago[29] I urged that death was often due, in infectious and septic diseases, to the fact that the osmotic properties of the blood became deficient, and advised the use of saline solution from the onset of the disease. The great reduction in the mortality of pneumonia in the practice of men who have carried out this suggestion has demonstrated its value.

Important in this connection, however, is the fact that the use of adrenal extractives might prove more harmful than beneficial in sthenic cases, especially when the febrile process is very active and the blood-pressure high. The saline solution alone is indicated under such conditions. But when, as in Hoddick's cases, the blood-pressure is low and there is cyanosis, it is because the dangerous stage which the saline solution would have prevented has been allowed to come on. Here the addition of an adrenal principle to the saline solution is of distinct advantage, precisely as it is in collapse due to other causes, while simultaneously enhancing the immunizing properties of the blood and thus counteracting the pathogenic agents.

The most striking influence of adrenal preparations on the immunizing process is illustrated by the beneficial action in the advanced stage of febrile infections, including the exanthemata and toxemias. Exhausted through prolonged overactivity, the adrenals are unable, as they are in Addison's disease, to secrete enough of their product to satisfy the needs of the organism, and, besides, to sustain the immunizing processes to their full efficiency. Now, adrenal preparations have been found to counteract this evil trend. Hutinel, for example, found them of great value in the asthenic stage of scarlatina and measles. This applies also to the disorders, such as diabetes mellitus, exophthalmic goiter and acromegaly, in which the earlier stages are attended with marked general erethism and excessive oxidation. Here also, as in the infections and febrile toxemias, the remedy is of signal help when the adrenals themselves have begun to fail; that is to say, when the stage of prostration with low blood-pressure, a compressible pulse, hypothermia and a tendency to syncope has been reached.

In pleuritic effusions, as shown by Sir James Barr, injections of the adrenal active principle, after evacuating the cavity, prevent further secretion. This method has been applied to effusions in other locations, the tunica vaginalis, peritoneum, etc. Here the physiologic action of the remedy brings in all the features I have enumerated, besides preventing the reaccumulation by reducing the permeability of the local capillaries. Hence, the fact that in some of the cases reported, the general condition of the patient was also greatly improved.

SUMMARY.

The list of disorders in which adrenal preparations have been tried could be greatly extended, but I have limited myself to those in which their use has proved advantageous in the hands of a sufficiently large number of practitioners to warrant their being added to our trusted remedial agencies. Of these, a certain number may even be said, interpreted from my viewpoint, to exceed other means at our disposal in value. These are:

1. Addison's disease. In this affection adrenal preparations compensate for the deficiency of adrenal secretion, and therefore for deficient general oxidation, metabolism and nutrition. The dosage should be adjusted to the needs of each case. Beginning with ½ to 2 grains of the desiccated extract three times daily after meals, the dose should be gradually increased until the temperature and the blood-pressure become normal, when the last dose should be maintained.

2. Surgical heart-failure, collapse from hemorrhage, shock, asphyxia and submersion. Here the adrenal active principle (suprarenalin, adrenalin, etc.), as a catalyser and a constituent of the hemoglobin, promotes energetically the intake of oxygen and its utilization by the tissue-cells, including the muscular elements of the cardiovascular system, and thus causes them to resume their vital activity. It should be very slowly administered intravenously, 5 minims of the 1-1,000 solution to the pint of warm (105 F.) saline solution. In urgent cases, 10 drops of suprarenalin or adrenalin in 1 dram of saline solution can be used instead, and repeated at intervals until the heart responds. Artificial respiration hastens its effects.

3. The toxemias, including bacterial infections, surgical septicemias, etc., when collapse threatens, especially when a persistenly low blood-pressure, hypothermia and cyanosis are present. Besides enhancing pulmonary and tissue respiration, the adrenal principle, administered in the same way, enhances the efficiency of the immunizing process.

4. Capillary hemorrhage from the pharyngeal, esophageal, gastric or intestinal mucous membrane. The mastication of tablets of adrenal substance, or the oral use of powdered adrenal substance in 5-grain capsules, arrests the flow by causing active metabolism in the muscular elements of the arterioles of the mucosa and constriction of these vessels.

I may add to these a series of disorders in which adrenal preparations will probably prove of great value when sufficient evidence will warrant a final conclusion. These are:

1. Sthenic cardiac disorders with dilatation of the right ventricle, dyspnea, and possibly cyanosis and edema, owing to the direct action of the adrenal principle on the right ventricle and improved oxidation and metabolism in the cardiovascular muscles and the tissues at large. Tablets of from 3 to 5 grains of the desiccated gland can be taken after meals.

2. Asthma, to arrest the paroxysms, by augmenting the pulmonary and tissue intake of oxygen and the cardiovascular propulsion of arterial blood. From 5 to 10 minims of the 1-1,000 solution of suprarenalin or

adrenalin in 1 dram of saline solution should be injected drop by drop into a superficial vein, or hypodermically.

3. To prevent the recurrence of serous effusions in the pleura, the peritoneum, the tunica vaginalis, etc., after aspiration, by reducing the permeability of the local capillaries and restoring the circulatory equilibrium. From 8 minims to 2 drams (according to the size of the cavity) of suprarenalin or adrenalin, in four times the quantity of saline solution, should be injected into the cavity.

4. In neuralgia or neuritis, applied to the cutaneous surface over the diseased area to produce ischemia of the hyperemic nerves and thus arrest the pain. One to 2 grains of a 1 to 1,000 adrenalin ointment should be applied by inunction.

The doses advocated will appear small to many. I can only urge in explanation that the power of the adrenal principle, as shown by physiologic chemists and my own investigations, is such, that it should be used with greatest circumspection. Several recently reported deaths from its use emphasize the need of precautions when employing the hypodermic, intramuscular and intravenous methods. Their oral use is at best unreliable. This does not apply to that of the gland itself, nor to the desiccated gland, 1 grain of which represents 6 grains of gland substance. These prove quite effective, though they act slowly in most instances, when the disorder or condition present actually involves the need of the adrenal principle to enhance either the oxidizing power of the blood or its immunizing properties.

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ORCHITIC AND OVARIAN THERAPY.*

GEORGE SCHMAUCH, M.D.
CHICAGO.

In discussing organotherapy, one must necessarily justify his theory. Our medical education is based upon pathologic anatomy, as it has developed arduously in the last forty years, from observations on the sick-bed, post-mortem and animal experiments. Bare facts perceptible to the eye form the standards of the diseases known to us. The inflammatory, the sclerotic, the infiltrating processes are so far the only recognized standards of a diseased organ. Organotherapy is the pure product of clinical observations, its theories and conclusions are those of human logic with all the natural errors attached. The plus and minus in the functional output of an organ, not necessarily linked with hypertrophy, form so far its only tangible basis. Organic chemistry has not progressed far enough to substantiate it. It is so much easier to work and teach with perceptible factors than to reason with so far unknown premises.

Cellular pathology was taken up by the profession with such great enthusiasm, because it placed concrete, perspicuous notions in place of the vitalism. And now we observe in the organotherapy a resurrection of the old doctrine of *vita propria* of the various organs. We fight with our organotherapy certain dyscrasias already advanced by Galen. While Claude Bernard was the first to advance the doctrine of internal secretion for liver and spleen, while he was teaching that every cell producing an external secretion has also an internal secretion, it is Brown-Séquard's merit to have applied this theory to the germinal glands. His ideas naturally met a larger support in the profession, as the whole world was acquainted with the visible results of castration in man and animal, at least it thought it was. He, however, as so many after him, made the wrong conclusion that inasmuch as man is only sexually active in the prime of life, that loss of this activity causes senility of the rest of the body. Debility and senility could therefore be prevented and cured by introducing artificially the substance of this gland.

Still his theories were accepted slowly by the profession, which could not conceive the ideas of internal secretion. Especially in Germany did this theory meet with great rebuff. It was called a revival of the crazy ideas advanced by the monks in the middle ages and their teachings pertaining to the sequelæ of the "semen retentum, the unsatisfied womb."

In the last fifteen years gynecologists, puzzled by the mysterious functions of the female sexual organs, took up the question of internal secretion more seriously, and we must confess it has given us a much better understanding of the woman's body. As the number of sexual glands in the female is much larger than in men, ovaries, mammæ and uterus, they proved a better object for observation.

All we know about the function of the ovaries, menstruation, the symptoms of pregnancy and change of life, about the mysteries of

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woman's life, is due to observations made by men. Although we have quite a number of women practicing, there are hardly more than two or three contributions to this subject from women. It seems strange that men would be able to bring forth valid statements about woman's nature; still it remains a fact.

Otto Weininger, a German psychologist, made the statement that so far no pregnant woman has expressed her sensations either in a poem or in gynecologic paper. "*Mulier taceat de muliere,*" as Nietzsche says. We cannot overcome the difficulty; our present ideas about the internal secretion of the ovaries are one-sided.

Discussing internal secretion of ductless glands, one has to recognize first that there is only an hypersecretion and hyposecretion. It is plainly absurd to assume that any tissue of the human body produces a poison which might prove noxious to its host. Even the carcinoma does not produce such a poison. The fetus in the womb creates no poison. It is not the placenta that causes eclamptic fits, but the woman's own system being overloaded by the parasitism of pregnancy. This parasite sometimes makes demands upon the maternal glands with internal secretion that are excessive.

Why does such an overburdening occur? Why does the thyroid gland in one case of pregnancy swell up and not in others. Why does one woman menstruate during the first months of pregnancy, and why do whole families show this abnormality while the majority of women do not? Why do two or three sisters in one family develop goiter after child-birth? All these irregularities are explained by the inferiority of one of the glands with internal secretion. Just as one woman has a better developed glandular tissue in her mammæ than other women, ovaries and thyroid glands may vary in their functional output.

In regard to internal secretion, women are more highly organized than men. Their larger number of sexual glands, ovaries, uterus and mammæ, counterbalance another group of glands whose main representatives are the suprarenal bodies. There is still some discussion regarding the place the thyroid occupies in those two groups. As stated on another occasion, I take the thyroid as synergetic with the ovary. Ovaries and thyroid on one hand hold the balance with their antagonists, namely, the suprarenal bodies.

Women are physiologically subjected to greater changes in their metabolism than men, on account of the periodical changes, namely, menstruation, pregnancy, birth and nursing. This periodical tide occurs in such a way that it reaches its highest point some time before menstruation. Without considering the causes of this monthly periodicity, I will only point out here that *its height is connected with an increased activity of the two groups of glands with internal secretion.*

A quantitative disturbance in the output of any of these glands is sufficient to explain the unbalanced metabolic changes without referring to a mystic toxic secretion.

These disturbances form the foundation of our organotherapy; it is the only causal therapy besides that of bacterial sera. Having in mind

the complex nature of the internal secretions, the antagonism between the two composite groups of glands, we will readily understand that organotherapy helps in certain cases in a most surprising manner, while its use often has no effect whatever.

There is also some periodicity in the function of these glands in men; however, it is so small that it is not perceived by the majority of men. The comparatively large amount of chemical work done by the woman's body physiologically during menstruation and pregnancy (not the external sexual characteristics) is what differentiates her from man, and makes her unfit for many of the toils of men.

It is easily understood that this physiologic harmony of ductless glands might become disturbed by the inferiority of one of them. This gland might have been inferior from time of birth, or might become weakened by microbic infection. In the thyroid it is the typhoid and influenza germ and in testicles and ovaries the gonococcus is the most frequent cause of infection. Such glands will not be able to respond in a normal way to the increased demand brought on by puberty, menstruation and pregnancy. Other substitutive glands will become hyperactive, hypertrophic; they themselves or the inferior glands will exhaust their force prematurely. The result will be precipitated climax, dysmenorrhea, persistence of lacteal secretion and all the other metabolic diseases peculiar to woman, as Basedow's disease, osteomalacia, etc.

Another thing absolutely necessary for the understanding of the germinal glands is the abolition of the old view adopted by Darwin, Weissmann, Moll and others, namely, castration of the male animal makes it effeminate, while that of the female renders it masculine.

Hegar, gynecologist in Freiburg, was probably the first to rebel against this false doctrine, *"Propter solum ovarium mulier est quod est."* Castration creates an intermediate type of sex. Rieger, Sellheim, Foges have helped to promulgate this new doctrine. *Castration brings forth an asexual type, but does not lead to a change of sexual character.* All those phenomena observed after ovariotomy, as masculine appearance of the face, growing of a chin beard, etc., are merely secondary attributes of sex, just the same as the changes at times noticed in the plumage of old hens. There are still a number of physicians who deny anything like climacteric phenomena after removal of both ovaries or the uterus. To these men I might reply that one positive case proves more than ten negatives. That great master physician, Nature, is always ready to repair the injuries inflicted by surgery. Whenever there is a loss of one of these glands, the disturbance becomes compensated sooner or later.

Another obstacle for rational sexual organotherapy may be seen, in that even the highest organism is bisexual, according to our leading biologists. Each sex contains the properties of the other in a latent condition; they might become manifest when the principal germinal glands are removed in the prime of life. There are probably more intermediate sexual types than norms. I will only mention the historical reports of gynekomasts nursing their children. Most of the skeletons we cannot classify as male or female. A woman might have all secondary charac-

teristics of female sex and still to a greater extent be masculine. These are the principles of our modern doctrine of inheritance.

Testicles as well as ovaries have a pronounced influence on the development of the body. The increased accumulation of fat after castration is well known. This becoming fat we notice in our castrated woman also. It is no proof against this theory that every woman does not become fat after this operation. I have mentioned that most of our studies on sequelæ of the removal of the germinal glands were made on women. Although the testicles are much easier to get at, man strangely has refrained from removing them. The removal in hypertrophic prostata some time ago en vogue was not apt to enlighten us, as it is done in old men.

The "decayed" ovary is quite popular in our city; the testicle is not yet in such a dilemma. The only work that takes up the male castrate and its somatic condition is that of Tandler and Gross, 1908.

These authors examined five Skopzen, a religious sect extending through a large part of Russia and Roumania. Castration of the young male is one of the rites of their religion. They had to go down to Roumania from Vienna in order to make their studies. They had to use strong political influence, had to spend money freely in order to get these men to submit to the examination.

The most prominent symptoms of the male castrate consists of the long-lasting immaturity of their organism; their bodies give the impression "of being chilled in their infantile form."

Persistence of the epiphysian lines and beardless face were found generally. Only in advanced age a chin beard appears similar to that of woman in the menopause.

Have ovaries and testicles the same validity? Man who has a smaller number of sexual glands shows, according to all reports, a greater defect than woman after castration. They do not constitute with absolute necessity what we term sex, still as it seems they must be present in order to give the individual, the male or female, character.

In both sexes we assume a certain grouping of these glands with internal secretion. Glands that are synergetic counterbalance another group, their antagonists. In woman the number of these glands is larger and their corelations better studied. Loss or hyperactivity of one of these glands is not absolutely connected with a disturbance of the general metabolism, but may, as you know, lead to a definite symptom-complex, to diseases such as Basedow's disease, osteomalacia, acromegalia, which nearly always is connected with amenorrhea, cretinism and myxedema.

The first disturbance in the equilibrium occurs in both sexes at the time of puberty. The establishment of all those properties, that we comprise by the name puberty, as well as those of the menopause, set in by leaps. They have recently, and as I think justly, been connected with the expiring function of the thymus. The female organism, which physiologically has a smaller number of blood cells, suffers from chlorosis. During pregnancy ovulation stops in most women, while mammæ and uterus become larger. These two organs are synergetic with ovaries and

thyroid. The internal secretion of the uterus is still questioned. However, we know that women with metritis may present all the symptoms of pregnancy.

We are familiar with the fact that in women with a myomatous uterus, when pregnant, the so-called early and subjective signs of pregnancy do not show until the fourth or fifth month. The breasts of women after child-birth swell up until the lochia set in. From the time of the appearance of the lochia a regular secretion of the mammæ begins. This is not an atrophy, as Halban, of Vienna, maintains, but an increased activity at the expense of the other sexual organs, mainly ovary and uterus.

Artificial hyperemia of the mammæ is able to cure some cases of dysmenorrhea. The sucking of the child creates after-pains, the activity of the breasts brings forth the involution of the uterus. Women complain of turgor in their breasts only in the so-called premenstrual stage. The energy of all the functions of the female organism reaches its maximum some days before the menstruation. As soon as this periodical tide abates (Wellenthal), when the tonus of the blood-vessels is diminished, becoming evident through the menstrual flow, the pains in the breasts cease. Castration stirs up in a great number of women the secretion of milk. Extract of thyroid has the same effect. After Porro's operation women nurse their children.

Whether presence of the testicles has any influence on the development of muscle power has not yet been proved. On the other hand, we know very well that the rut puts the deer in such a war-like state that it even attacks men. The wedding garb of some male birds, snakes and fishes during the time of copulation is evidently the result of increased function of their male glands. From all that has been stated above, it will be evident that both glands exert a specific sexual influence. What does the internal secretion of testicle and ovary consist of? Both glands furnish a product that is secreted outwardly, which does not become active before puberty, and again slowly vanishes in higher age. That of the testicle is secreted in larger quantities and is the product of the cells that line the seminal canals. The secretion of the ovary, the ovulum, preformed during intrauterine life, is only produced once a month. There are no exact observations pertaining to this phenomenon. The ovulum secreted once a month is the largest and highest organized cell known, while the spermatozoon secreted in large numbers presents one of the smallest cells. This phenomenon does not, however, constitute all of the functions of these glands. Both contain in their stroma special cells, the interstitial cells of the testicles with their characteristic crystalline deposits, the Renki crystals and the interstitial cells of the ovaries with their vacuoles or granules giving the fatty reaction and resembling the lutein cells. Both cells have been anatomically known for some time. However, their significance was not understood. Pflueger, Waldeyer and other authors have described them as "kornzellen, markzellen," etc. Their proper interpretation as glandular cells, the idea of ovaries and testicles being interstitial glands, originated with French authors. Limon was

one of the first to point out that ovaries of the same animal species show differences in the quantity of the interstitial tissue. In women we find it most developed in the years just before puberty and again during pregnancy. The largest display of lutein cells may be seen in certain cases of chorioepithelioma and hydatid mole. Contrary to all other authors, I have always pronounced that luteincyst formation is the factor which regulates the character, the malignancy of this growth. In true malignant chorioepithelioma we do not find lutein proliferation.

You are all acquainted with the effects of the Roentgen rays upon the germinal glands. Fellner's experiments on animals show that irradiation of the ovaries in the first half of pregnancy is followed by a regression of pregnancy. Angel and Bouin have confirmed these findings; the *x*-rays produce degeneration of the follicular as well as of the secretory parenchyma. The male deer throws off his horns once a year and grows new ones. When the buck is castrated the horns are thrown off within six weeks, should he happen to have same, regardless of the season. Instead of growing an antlered horn, he grows crippled horns. Game wardens who observed this phenomenon long ago call it a wig (Perueckengeweich). This peculiarity is closely connected with the presence of the interstitial gland of the testicle. The Roentgen rays destroy only that part of the testicle that forms spermatozoa. This was proved by microscopic examinations. The buck treated in this way was perfectly normal regarding the change of his horns.

These findings agree very well with our clinical experience; double gonorrheic epididymitis leads to sterility, but not to changes in the secondary sexual characteristics. On the other hand, we observe that gonorrhea of both adnexa brings on amenorrhea, irregular menstruation and sterility, and may some years later lead to a precipitate climacterium. Thus we see our old clinical experience proved by animal experiments.

While it seems established that the interstitial gland of the testicle is an independent organ, we cannot as yet say the same of the ovary. The ripening of the follicle and formation of the corpus luteum in the interstitial gland and formation of lutein cells seem so far to be two so closely connected procedures that one cannot take place without the other. Fraenkel in Breslau draws the conclusion from his experiments that the corpus luteum alone makes possible the nidation of the ovum, also regulates the continuation of pregnancy. Limon and Wallart believe that the ovary besides the corpus luteum contains an interstitial tissue that is composed of cells similar to the lutein cells. This interstitial tissue corresponds, according to Lamartine and others, on account of the similarity of cell shape, with the interstitial cells of the suprarenal bodies and also the Langerhans cell islands of the pancreas (Rebaudi).

It is doubtful whether the ovary is absolutely necessary for a continuation of pregnancy. There is a case reported in which pregnancy lasted 263 days after double ovariotomy.

Male and female genital glands contain two tissues, differing in their validity in their influence on the somatic development. The exokrine product is of epithelial structure, while the epithelioid tissue, regulating

the endokrine secretion proper, is to be derived from connective tissue, at least that which the lutein cells concern.

It is necessary to remember all these points when discussing organotherapy. Another important point emphasized before is, the sexual glands form only one link in a chain of equivalent glands that cooperate, that may replace each other and that may possess from birth a varying strength. Their double nature explains so far the opposite views of the authors in regard to the position of the sexual glands whether they are synergetic or antagonistic to the chief representative of internal secretion, the thyroid.

Passing now to the object proper of my paper—orchitic and ovarian therapy—I have to state that I treat very few men, as I am a gynecologist; I therefore have no personal experience in orchitic therapy. I have mentioned that Brown-Séquard employed extracts of testicle on himself. In 1889 asepsis had not advanced to the standard of to-day. The injections were combined with many inconveniences, such as formation of abscesses, etc. Later Poehl of Petersburg, an enthusiastic adherent of organotherapy, isolated the spermin from the testicles of horses and used it in a 4 per cent. alcoholic solution, the so-called essentia spermini Poehl. Spermin occurs in other organs besides the testicles and also in the blood. It increases the activity of the heart. It is said to have a tonic effect on the muscle power and the general condition of nervous and debilitated men. Poehl's followers have demonstrated that spermin injections increase the alkalescence of the blood, produce leukocytosis, decrease blood pressure; in short, spermin is antagonistic to adrenalin. There are a number of favorable reports at hand from Russian and Italian authors. The preparation is expensive and has not therefore been used extensively. The injections are not painful and cause a pleasant sensation.

Baum, who voices the German authors (Eulenburg, Senator, Furbringer, Ewald), says spermin has no specific effect, it is a physicochemical agent which increases internal oxidation and regulates metabolism. This is the same opinion as already expressed by Poehl, who explained the effect of spermin as katalytic.

We are better versed in ovarian treatment. The greedy hand of the general surgeon has deprived many women of their ovaries. The ghost of the small cystic ovaries which, together with the useless repair of the unavoidable laceration in the vaginal portion during delivery, still dominates the field of surgery of women, has created the ovarian therapy. We are now at least somewhat enabled to save our women patients the dreaded phenomena of the sudden menopause.

Gentlemen, there are perhaps four cases reported of Basedow's setting in after the removal of ovaries. The actual number, however, is much larger and still more frequently hyperthyroidism is observed thereafter. This was proved to me by cases reported at our meeting on November 17. The scientific research of the result of useless operations is somewhat impeded by the spontaneous natural repair. Nature repairs in a few years the damage done by the clever surgeon. Other glands take up the

work of those removed. The Emmett operation is often performed so thoroughly that a pin-head opening is all that remains of the external os. This opening is sometimes directed towards the vagina, it can only be found with difficulty. It takes sometimes from six to eight months and even a year before Nature adapts itself to this artificial hyperemia, but finally the woman gets well and even praises her doctor.

Three large groups may be differentiated in ovarian therapy: First, the removal of both ovaries. A scientific indication for removal is only to be seen in osteomalacia (tumors excepted). In the greater number of these cases this operation proves not only curative, but life saving. Some cases of grave hysteria have also been cured by double ovariotomy. I have observed such a case myself for a long time. In these cases the removal of the ovaries will naturally be the last resort, after everything else has failed.

The small cystic degeneration of the ovaries is probably often something physiologic. For the greater the number of pregnancies, the larger will be the number of atretic follicles. The post-mortem of every puerpera reveals small cystic ovaries. In most of the women ovulation ceases during pregnancy. All the half-ripe follicles become atretic and cystic through the destruction and resorption of the ovum and its cells. The removal of the small cystic ovary, of an organ whose pathology consists of an impeded ripening of the follicle is biologically the same as if you would remove the testicle of a man who suffers from azoöspermia. You try to cure the impeded and insufficient function by removal of the organ. Among the hundreds of cases reported in our city also, some are to be found that show excellent results, patients who had consulted many doctors. In some of these successful cases an hypersecretion of the ovaries or synergetic glands might have existed. The removal re-establishes the disturbed harmony. Hypersecretion of the ovaries brings on osteomalacia and is cured by their removal. This, however, does not prove that osteomalacia is the only and unavoidable consequence of such changes in the internal secretion. The so-called neuralgia of the ovaries may also be cured by the removal of the ovaries, but antipyrin injections have the same effect.

The second large group comprises the reimplantation of the ovary. We find about twenty-four such cases reported. The successful transplantation is, as you know, one of the fundamentals of the doctrine of internal secretion. It has taught us to discard all that chaos of trophic nerves. In contrast to the ovary, testicles cannot apparently be transplanted. Cevolotto's reports show again that the spermatoblasts perish in the transplanted testicle. We differentiate between autoplastic transplantation, the implantation of the patient's own ovary in the pelvis or thigh and hetero or homoplastic transplantation of the ovary of another woman. When the transplantation has been successful, menstruation sets in within three to six months. Osteomalacic patients treated with removal and reimplantation improve up to the moment when the transplanted ovary takes up its function, until the menstruation sets in. With

that moment the old pains in the bones reappear as Pankow's case demonstrates.

Autotransplantation has been performed mainly in order to spare women the much-dreaded climacteric phenomena. Nothing embitters the enjoyment of successful gynecologic operations more than the sequelæ of castration (Chrobak).

In the last ten years we have learned to save some ovarian tissue, even when both ovaries are involved in benign cystic tumors. Morris of New York has performed autotransplantation chiefly in inflammatory diseases of the adnexa and succeeded in avoiding the precipitate menopause. In dysmenorrhea we cannot expect any help from reimplantation of the ovaries as shown by Pankow's cases. In his cases patients were well until menstruation set in. Morris' results in dysmenorrhea must probably be attributed to the loosening of many adhesions. In metritis with severe hemorrhage this operation was not successful, either.

Homoplastic transplantation has been done for operative, inborn (infantile uterus) and acquired amenorrhea (lactation atrophy of the uterus). In four of these cases the patients became pregnant; two women aborted and two living children were born at term (case of Morris and Halliday Croom). This gives rise to the question whether the proprietress of the grafted ovary or the mother who carried the child is the real mother. As there are six to eight cases of pregnancy after double ovariotomy reported, this question cannot be decided without a renewed autopsy *in vivo*. This somatic organotherapy will necessarily work better than the administration of dead chemical products.

Before the transplantation of the ovary was successfully performed, some gynecologists conceived the idea of improving the clinically unsatisfactory results of panhysterectomy. Some of their patients remained invalids for a shorter or longer period after operation. Chrobak of Vienna and Landau of Berlin tried the administration of ovarian substance. They used ovaries of the freshly killed hog, oöphorin, ovariin. Ovaries of these animals are especially rich in interstitial parenchyma. Later on ovaries of cows were used (ovaraden). As oöphorin has been in use since 1895, we are able to form an opinion about its value. It has established itself in our Pharmacopeia. It is principally used in the precipitate as well as the physiologic amenorrhea of the climacterium. Again and again we see most surprising results. The state of anxiety and the perspiration which accompany the hot flashes disappear in a few days, and soon afterward the number and duration of the attacks are reduced. Women that had thirty to forty flashes a day return at the end of fourteen days and inform you they have now only one or two a day, and these are not connected with disagreeable sensations, either. A few days after you stop the medicine the old complaints return.

In these nervous conditions which attend the amenorrhea of gonorrheic adnexitis, oöphorin is of good service, also in the first months of pregnancy and, as a French author claims, in vomitus gravidarum. It does not bring on abortion even when given subcutaneously. Not every

disturbance of the general health of a pregnant woman is caused by hypothyroidism as most physicians assume.

Clinical experience has, furthermore, taught us that ovarian substance cures some cases of amenorrhea. In most cases it is of no avail; indeed, we have in the thyroid preparations a much better emmenagogue, as emphasized already by Solis Cohen. When treating amenorrhea we have to remember that ovulation and menstruation, although in some temporal connection, are two separate phenomena. Both phenomena cause the so-called periodicity in woman's life; still they are independent of each other. There are a number of cases reported of amenorrheic women who became pregnant. There are women who never menstruated yet bore children. *Ovulation is an absolute requisite of impregnation, while menstruation is only a concomitant phenomenon that facilitates the nidation of the ovum; it is probably the product of a whole group of glands with internal secretion.* These glands are also influenced by other conditions, for instance meteorologic. In primitive races amenorrhea is quite frequently found; according to Cook, many of the native women of Lapland menstruate only during summer time. Menstruation might in a single case even prove independent of the presence of the ovaries, as we observe occasionally in women operated on and as demonstrated very nicely by a case published recently by Gellhorn of St. Louis. After a menopause of six months after double ovariotomy, regular menstruation set in after administration of oöphorin and disappeared again when the medication was discontinued.

According to Van der Velde, oöphorin cures the so-called "Mittelschmerz," an intermenstrual pain that sometimes occurs at the height of the monthly effervescence of the generative organism in women. This same author succeeded in bringing forth the periodic tide, periodic changes in temperature and pulse and menstruation, in women who were already one year and a half in their menopause by the administration of oöphorin. There are several cases on record in which ovarian extract has brought on menstruation in women who had regular monthly *molimina,* but no menstrual flow.

All this demonstrates that ovarian substance given per os often proves the missing link in the chain of organs that create the monthly bloody discharge. So far we have explained the effect of this preparation as katalytic. Recent examinations of adrenalin (Straub, Kretschmer) have made it very probable that the mechanism of its effect is analogous to that of muskarin (Reizgifte). It has to be given in a certain quantity in order to produce glycosuria. The English physiologist Starling has named these substances in contrast to nutritious matters, hormons. He succeeded in showing that extracts of an embryo injected into virgin animals produce growth of the breast, just as if the animal were pregnant (mammæ-hormons). Some authors are already discussing ovarian hormons that should bring on hyperemia of the pelvic organs. This, however, is not yet an established fact.

Experiments on animals show us what effect ovarian substance given by mouth has on the general metabolism. It increases the gaseous metabolism without destruction of nitrogenous substance, as shown by

Loewy, Richter and many others. According to Mathes, it augments the output of phosphorus. Similarly to spermin it exerts a vasodilator effect, in contrast to the vasoconstrictor adrenalin. Fraenkel of Breslau, who advanced the corpus luteum theory, was instrumental in getting up lutein tablets, and it is claimed they have helped in some cases in which the oöphorin was of no avail. I have no personal experience with it.

We can justly conclude that ovarian substance enables us to influence the general metabolism in women. This influence becomes evident (1) *in the enlargement of the periodic tide* which occurs physiologically in woman's life and which manifests itself by a regular monthly bloody discharge from the genitalia in healthy women. Administration of ovarian substance sometimes brings forth menstruation, it increases the scanty flow and makes it more regular. Women thus treated lose in weight, but not as much as when thyroid is given. (2) *It enables us to regulate the rapid decline* of the periodic tide, which sometimes takes a very stormy course in the climacterium. We thus give the organism time to adapt itself to the disturbed balance in the output of the internal glands, the natural consequence of the extinguished function of the ovary. Ovarian substance fed to animals or men is not able to prevent the atrophy of the genital organs which sets in after castration. It is ovulation that keeps them in a reproductive condition.

Because ovariin brings on menstruation, it recently has been recommended in cases of infantile uterus and sterility (Bab), also in sexual frigidity. It re-establishes and regulates sometimes the periodicity in woman's life and could thus create a hyperemia of the genital organs. All the drugs used in amenorrhea are given with this intention. As these trials are of a very recent date, one cannot as yet form an opinion regarding them. A periodic hyperemia might improve the ripening and regulate the bursting of follicles, we might produce menstruation, but will not necessarily cure thereby the sterility.

Physicians are still too ready to explain these good results of ovarian therapy with suggestion. It is hard to disprove this objection. What differentiates man mostly from plants and animals is our *psyche*. The higher susceptibility to all kinds of suggestions, not alone the teachings of church and school, constitutes man's superiority. As long as the genus homo exists it will be subject to suggestions. The operations we perform have a greater suggestive influence on the human mind than the most learned physician. On the other hand, the man who makes a rational use of organotherapy is the last to deny the influence of psychic phenomena on these glands with internal secretion. Just as man becomes pale and perspires when in anguish, showing a nervous sympathy, *our glands with internal secretion are susceptible to outside impression.* It is well known that Basedow's disease may set in after fright, that hysteria may be caused by a psychic injury, that the menstrual flow is suddenly suppressed.

The more a woman watches for her menstruation, the surer she is of missing it. How many times have we heard from our women patients

that sudden stoppage of her menses was the beginning of her illness, of her female weakness. Man in his superiority cannot understand things like that. Being more robust by nature, having a smaller number of glands with endokrine secretion, whose functions are not subjected to periodic hyperactivities, man naturally is exempt from many of the psychic disturbances that affect women. We smile at our pregnant patients when they ask our opinion regarding prenatal influence. A child is not necessarily born with a birth-mark after such a psychic impression, but might otherwise be born inferior. As I have emphasized upon another occasion, *the child's organism while in utero adapts itself to that of the mother.* The child of an eclamptic mother shows sometimes right after birth the same eclamptic convulsions; new born girls now and then menstruate once or twice. Their ovaries are not active, but the mother's periodicity reflects itself in her newborn daughter. Children born of women whose internal glands do not act properly develop rickets, exudative diathesis, Basedow's disease and are sickly.

There is no better proof of the influence of the *psyche* on the organs and the whole body than the existence of mental healing advocates, this shrewd exploitation of the natural feebleness of human mind. It is a natural reaction against operations for small cystic ovaries, for tears of the cervix, for every little fibroid. The founder of such movements shows a better understanding of the psychical conditions that influence woman's organism than any of her sisters who follow the rules of men in mutilating women.

This might sound somewhat aggressive, still the obstetrician and gynecologist cannot help emphasizing the fact that the general surgeon sometimes forgets the highest principle in the art of healing, that is, *nil nocere.*

100 State Street.

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THYROID THERAPY.*

JAMES B. HERRICK, M.D.
CHICAGO.

With the discovery of the relation borne by the thyroid gland to myxedema, and the value of administering sheep's thyroid to sufferers from this disease, there developed an intense interest in internal secretions in general and in organotherapy. The brilliancy of the results following thyroid feeding in myxedema attracted wide attention and the remedy was soon being employed by practitioners in all parts of the world in the treatment of a variety of diseases, some loosely related to, or superficially resembling myxedema, while others were not even remotely allied to it. Many in their enthusiastic exhileration were unaware that their field of vision was temporarily narrowed so that they did not see how much of loose observation and hasty conclusion there was in their reports, and they have often been hysterically insensitive to the pin-pricks of pharmacologic and rational clinical criticism. Unless one has taken the pains to look up the subject one can scarcely imagine the extravagance of the claims made for thyroid extract, claims for the most part based upon the empirical use of the remedy in a small number of cases. But the pendulum has swung backwards and there is developing a spirit of skepticism concerning thyroid therapy (perhaps a too skeptical spirit) and the demand has arisen for a more careful testing out of the remedy and its essential principles in the laboratory and by animal experiments and by a careful collating and judicial summarizing of experiences at the bedside. Not until this has been done will the real position of thyroid extract as a therapeutic agent, with its powers for good and for evil, its possibilities and its limitations, be known.

The present paper, necessarily brief, is not an attempt to present such a comprehensive summary; it is merely an answer to a request to present some of the leading facts concerning the therapeutic employment of the thyroid gland. This I shall do in mere outline and largely from the standpoint of the clinician.

As is well known, the *manner of administering* the gland has been various: feeding of fresh gland, the use of glycerin extracts, etc. Poncet has even suggested manipulation of the thyroid, inducing a thyroid erythism, as he terms it. Kocher and others have tried the grafting of the thyroid into the spleen, bone and other locations, hoping that the graft may live, functionate and do away with the necessity of constantly administering thyroid substance per os. Carrell believes the subcutaneous tissue the most suitable location for such grafts. It is to be hoped that the encouraging results attending many of the efforts of the surgeons in this line may be the forerunner of practicable methods of furnishing in this manner a continuous supply of thyroid secretion. Not to mention other preparations, it may be said that the ones in common use to-day are the tablets of the dried sheep's thyroid (glandulæ thyroidea

* Read in a Symposium on Organotherapy before the Chicago Medical Society, Dec. 8, 1909.

siccæ, U. S. P., 5 grains each, often rather loosely spoken of as thyroid extract), the liquor thyroidei of the British Pharmacopeia, dose 5 to 15 minims, and the iodothyrin (thyroiodin) tablets, each 5 grain tablet containing 1/600 grain (3/10 mg.) of iodin with sugar of milk. This iodin-containing substance recovered by Baumann in 1895 is, with the thyreoglobulin of Oswald, regarded by many as containing the essential principle of the gland. In the United States the dried glands are in general to be preferred because of their cheapness, and the possibility that some of the virtue of the gland lies not alone in the iodothyrin, but in other as yet unidentified substances, though most experimenters and clinicians feel that the therapeutic value of thyroid extract is represented by iodothyrin. If this be true, and if it can be standardized more accurately than the variable sheep's glands, it should be the preparation of election. How much of the parathyroid tissue there is in many of these preparations, and how much of the efficacy of the thyroid depends upon the parathyroid inclusion is a subject worthy of investigation. Some of the literature on thyroid therapy may have to be rewritten when more is known concerning the parathyroids, their relation to tetany and other manifestations of disease.

PHYSIOLOGIC ACTION.

When thyroid extract, thyreoglobulin or iodothyrin are given to animals or to healthy or myxedematous human beings, certain rather constant effects are noted. These vary somewhat with the species of animal; and in man idiosyncrasies that are not well understood may necessitate the giving of larger doses before these effects are manifested. Among the most constant findings are increase in pulse rate and loss of weight. The rapid action of the heart is often noticed by the patient as a palpitation. Massive doses or long-continued use of the remedy may result in dangerous myocardial weakness. Blood-pressure seems to be lowered. The loss of weight is due in part to increased oxidation of fat, in part to increase in the amount of water eliminated, diuresis being common, but in large measure to rapid destruction of tissue proteids. Unless large amounts of nitrogenous foods be taken, the nitrogen loss through the urine and feces may exceed the nitrogen intake, nor can this loss be stayed by increasing the amount of fat and carbohydrate in the food. Increased metabolic activity is further shown by the increase in the output of oxygen and phosphorus. Where the thyroid has been removed the feeding of large quantities of meat may be followed by toxic symptoms, seeming to show the necessity of this gland for proper nitrogen metabolism.[1]

Albumin has been noted at times. Sugar is occasionally seen in the urine, suggesting some interrelation between the thyroid gland and pancreas, or adrenal, a question suggestively raised by Lorand, Minkowski, Falta, Sajous and others. Whether *the* secretion or some secretion of the thyroid gland has the action of a catalyser (Poehl, Oswald and Sajous),

1. Nicholson: Brit. Med. Jour., L, 954.

after the analogy of digestive ferments, or whether hormones may be assumed to exist or can be demonstrated, must be for the present answered with the interrogation mark.

I trust it may not seem discourteous to speak a word of criticism of the opinion of one who is our guest, but it seems to me that while many of his ideas are brilliantly attractive, and full of suggestive possibilities, and worthy of serious consideration as working hypotheses, some of them seem unreal, rather dream-like, and difficult to grasp. A speculative hypothesis or theory, such as his, touching closely, and attempting the solution of, so many of the knotty problems in the theories of Ehrlich, Metchnikoff, Wright and others,[2] and explaining the mysteries of the internal secretions, is one that must be worked out, not alone at the library writing-desk, but by systematic labor by many observers with the microscope, the test-tube, the incubator, the experimental animal, and the human patient.

The temperature is slightly elevated. There is a tendency to gastric irritation and looseness of the bowels. The skin easily flushes, may itch, and sweating is common. A state of nervous irritability is seen in the insomnia, mental unrest, anxiety, emotionalism and the tremors. Most patients complain of weakness. There is often a relative lymphocytosis. That these results of artificial thyroid feeding (thyroidism) closely resemble the picture presented by exophthalmic goiter is apparent, and has been one of the strongest arguments advanced for the support of the theory of Moebius that Basedow's disease is hyperthyroidism. Notthafft's[3] case, in which 1,000 tablets were given in five weeks with resulting Basedow's symptom-complex, even to the exophthalmos, with disappearance of symptoms when the drug was stopped, is often cited in support of this view.

THERAPEUTIC USES OF THYROID EXTRACT.

Myxedema.—The earlier favorable reports as to the value of thyroid feeding in myxedema have been confirmed by nearly all later observations. This applies to the forms developing in adults, whether the function of the thyroid be checked by operation, or by non-operative pathologic process. Some refractory cases have been encountered, and in others the improvement after a time seems to reach a standstill, and mental disturbances gradually become more and more pronounced, a condition of insanity often of the melancholic type resulting. This in spite of continued and liberal administration of the remedy. In other instances, especially those following operation, the use of the gland may not only be suspended for days or weeks at a time, a procedure which it is wise to adopt in all cases, but may ultimately be stopped for good, without recurrence of myxedematous symptoms. Such reappearance of the condition of health, that makes one assume return of the thyroid secretion, is to be explained on the supposition that there has been but a temporarily acting lesion of the thyroid, or a functional disturbance of the gland, or that

2. Cf. Sajous, in Gaillard's Southern Medicine, July, 1909.
3. Notthafft: Centralbl. f. Inn. Med., 1898, No. 15.

remaining healthy portions of the gland, or aberrantly located thyroid tissue, or perhaps the hypophysis cerebri have undergone compensatory hypertrophy, and are now acting vicariously for the original thyroid.

The caution that should be exercised in giving thyroid extract to any individual because of the danger of undue weakening of the heart seems from the reports of those most experienced to be especially needed in treating long-standing cases of myxedema. One should feel one's way and give larger doses only when it has been found that the smaller dose is well tolerated. Heart stimulants or rest in bed may be advisable in the beginning. Later, a small daily dose of the dried gland may be sufficient to preserve health. Certain writers, e. g., Combe[4] and Buschan,[5] advise careful regulation of diet, in particular abstention from alcohol and the use of a moderate amount only of meat, especially during the lulls in the treatment, having in mind of course the faulty handling of nitrogenous food by one whose thyroid secretion is limited in amount or perhaps qualitatively imperfect.

The importance of an early diagnosis, to say nothing of a correct diagnosis, is self-evident; secondary and perhaps ineradicable organic changes in cells, as those of the heart or brain, may thus be avoided. And especially is diagnostic acumen in demand when the case is one in which the symptoms are slight in degree, the "myxedema fruste" of Reverdin; or few in number constituting the "incomplete" form of some authors; or when only one symptom of myxedema stands out prominently, the so-called "partial" myxedema. Non-congenital forms developing in children and not strictly to be classed as cretins are occasionally seen, and the early diagnosis here may mean much in the way of furthering the future mental and physical growth of the individual. To children the gland substance or iodothyrin should be given with extreme care, as fatal results are said to have followed its too liberal administration.

Cretinism.—The marvelous results of thyroid therapy in congenital thyroid insufficiency or cretinism are attested by the many uniformly favorable reports from those treating large numbers of cretins in the districts where the disease is endemic, as well as from the reports of sporadic cases scattered through the medical literature of every language. Early recognition of the disease, even in its milder forms, care not to discontinue treatment unless, as exceptionally occurs,[6] there is natural resumption of thyroid function, watchfulness lest overdosing is practiced are urged by all. In one cretin for a long time under my care the best indicator as to the proper dose seemed to be the condition of the bowels. If the drug was pushed, looseness of the bowels was the precursor of flushed skin, irritability of temper, rapid heart action and slight fever. If too little were given the old constipation returned. It is difficult to decide which of the many wonderful changes occurring in these cretins on thyroid treatment is the most remarkable, the rapid growth in height, the remolding, as it were, of the features of the child and of the form of its entire body,

4. Combe: Rev. med. de la Suisse Rom., 1897, No. 6, p. 414. Cited by Batty Shaw, *Organotherapy*, London, 1905.
5. Buschan: Deutsch. med. Wchnschr., 1895, Series 736.
6. Magnus Levy: Ztschr. f. klin. Med., 1904, Bd. 12.

the disappearance of the macroglossia, the loss of the harsh, guttural voice tones, the rapid acquiring of words and the blossoming out of the mind that now has the intelligence to use these words rightly. It is all marvelous. Just how far the mental development will go it is impossible to state; in some so far that the cretin becomes a mentally bright individual, in others only fairly bright, but in all much brighter than before treatment. There is the same uncertainty as to growth in height, but there is usually, if the case be treated when young, a distinct increase in the rapidity of growth. A therapeutic experiment on a truly gigantic scale (if I may use such an expression in speaking of these pigmy or dwarf-like creatures) has just been reported by Kutschera.[7] In Steiermark, where cretinism is endemic, since 1907 cretins have been treated by thyroid tablets under state supervision and at state cost. In all there were 1,011 patients; at the end of 1908, 608 were still under treatment. In 1907, 108,600 tablets were used; in 1908, 157,900. Height was measured twice a year, and as gain in height was nearly always accompanied by improvement in cretinoid symptoms, it was looked upon as a rough index of the degree of improvement. In 85.7 per cent. of all cases a rate of growth was attained that surpassed the normal for the same age. This was especially striking in those beyond the age of 20 years, when normally the growth is but slight.

Infantilism.—The remarkable physical and mental changes brought about in cretins by the use of thyroid extract led to its trial in a variety of maladies characterized by lack of physical and mental growth. Often but little judgment was shown in the selection of the cases, and disappointment was felt and distrust of the virtues of the remedy was expressed because of its failure in conditions not even remotely connected with perverted thyroid function, such as various forms of idiocy, imbecility, faulty cerebral development and the mental and motor results of infantile cerebral and spinal palsy, epidemic meningitis, etc. That it has a place in the treatment of some forms of infantilism seems proved, though it is difficult to define its scope. Some cases of stunted growth, retarded sexual development, late ossification of the epiphyseal cartilages, and childish mentality are probably atypical myxedema or athyrea. These are benefited by thyroid extract. Some class them as myxedematous infantilism. In another form (type Loraine) there is seemingly a congenital arterial hypoplasia that at times is combined with insufficiency of the thyroid. The patient, a short, miniature man, with much of effeminacy in his make-up, may at times be helped by thyroid feeding, especially if treatment be begun before ossification of the epiphyseal cartilages, which process is normal in the type Loraine. In fetal achondroplasia or the short-limbed dwarf, thyroid feeding is of no benefit. It is perhaps a safe rule to give the remedy cautiously in any case of infantilism, unless the indications are clearly against its employment.

Obesity.—Nutritional obesity, the result of overfeeding and muscular inactivity, is best treated by diet and exercise. Thyroid gland is not indi-

7. Kutschera: Das Grossenwachstum bei Schilddrüsenbehandlung des endemischen Kretinismus. Deutsch. med. Wchnschr., 1909.

cated, though it occasionally seems of some slight value as an adjuvant. In constitutional obesity, and especially that of the so-called anemic type, thyroid gland substance aids oxidative metabolism, promotes diuresis and dehydration of tissues, favors elimination, and thus helps to do away with the storage of fat. Combined with diet and exercise, it is of service in reducing body weight. The exact part played by the drug is in most reported instances difficult to estimate, for the dietetic and mechanical measures, as is eminently proper, are commonly carried out at the same time. Nearly all writers urge watchfulness in the use of the thyroid in obesity. Often cardiac, vascular and renal changes are present, and there is danger that a too zealous reduction in the amount of food energy, with a strenuous employment of gymnastic measures may, if coupled with a free use of the drug, result in alarming weakness of the heart. It is particularly dangerous to place the tablets in the hands of the obese without warning as to possible harm that may come from their too long-continued or too liberal use.

While the cautious use of thyroid extract as an adjuvant in the treatment of suitable cases of obesity is justifiable and often beneficial, it is to be noted that some are very skeptical as to the good done by its employment, and argue that the fundamental defect in these cases is not a thyroid lesion, hence its employment is irrational; that the results are extremely uncertain, have been overestimated, and even though once obtained are not permanent; furthermore, the treatment results in excessive proteid metabolism and loss of tissue that can be poorly spared; and lastly, it is dangerous and has been known to cause death. Such names, among others, as Ebstein, Magnus Levy, Yorke-Davies and Richter, arrayed against the thyroid treatment of obesity, make us realize that there is not an unanimous approval of its use. Many others, however, agree that the effects of exercise, diet and laxatives may be aided by the use of thyroid extract if it be judiciously given for a long period of time, with occasional intermissions, and with the patient under strict observation. Measures and remedies calculated to strengthen the heart may be of service, and to avoid excessive proteid waste larger amounts of albuminous foods than are customarily given may be necessary, a procedure advocated by Rheinboldt,[8] and recently by Rzetkowsky.[9] Both these writers, by the way, secured definite loss in weight by the use of thyroid preparations without special diet or exercise, weight returning when the drug was withheld.

In adiposis dolorosa the results are not yet convincing, though thyroid changes may play an important part in the pathology of the disease.

Goiter.—Fibrous, cystic or calcareous goiters do not respond to thyroid medication, nor do neoplasms of this gland. Simple goiters, on the contrary, and especially recent cases in the young, have been reduced in size by the use of thyroid extract. The results are, however, not always permanent, as the gland often recovers its former increased size when the

8. Rheinboldt: Zur Fettsuchtbehandlung mit Schilddrüse, Berl. klin. Wchnschr., 1906, No. 24.

9. Rzetkowsky: Ueber Behandlung der Fettsucht. Medycyna, Kronika lek., 1908. Nos. 24 and 25. Abstr. in Virchow's Jahresbericht, 1908, ii, 62.

remedy is stopped. Roos, Henzel, Bruns, Kocher, Gauthier, Marie and others report favorable results. Henzel in 220 cases of simple goiter was impressed by the favorable results of thyroid therapy. Bruns studied 350 cases in men and dogs, and in only 26 per cent. were no results or negligible results seen. One naturally calls to mind the old empiric use of iodin internally and locally, and wonders whether the effects of the extract are due to the iodin content. Mabille[10] has advised the giving of arsenic at the same time as the thyroid extract, believing that by this method there is less danger of inducing thyroidism. Either there is danger of converting simple goiter into exophthalmic goiter, "basedowification of the goiter," or instances are not so very few in which a latent exophthalmic goiter has been wrongly regarded as simple, and with the addition of thyroid extract given as a drug has blossomed forth as a full-fledged Basedow's disease. Such a case the writer has seen. Great care should certainly be exercised in excluding Basedow's goiter before administering thyroid extract, and the initial doses even in cases supposedly non-exophthalmic should be small. One may speculate as to the rationale of the action and assume, as has been done, that the thyroid gland in cases of simple goiter has undergone an hypertrophy to meet a demand of the body for more of its secretion. The supplying of this deficiency by the administration of dried gland substance does away with the extra call upon the thyroid, and it diminishes in size, though often again enlarging if the substituted secretion be stopped.

Exophthalmic Goiter.—If exophthalmic goiter is due to the overactivity of the thyroid gland, is in reality hyperthyroidism as Moebius has contended, the use of thyroid extract in this disease is irrational and strongly to be condemned. Clinical experience, and I believe justly, overwhelmingly supports this view. Richter, writing in 1900, says of the results of thyroid therapy in exophthalmic goiter that they are a fiasco. But it is to be remembered that some do not accept in its entirety the theory of Moebius; some believe there are qualitative secretory changes, dysthyroidism, as well as quantitative changes or hyperthyroidism, and advocate a cautious use of the remedy in certain cases of exophthalmic goiter, hoping to supply certain qualitative deficiencies without inducing hyperthyroidism. Rogers and Beebe, for example, and Chas. Mayo, if I mistake not, advise the use of thyroid gland where there are certain features of a myxedematous character added to the Basedow's symptom-complex. And a long list of isolated cases of reported cures might be given, as is done by Gabriel Gauthier[11] in his monograph in 1902. He himself, while not advocating its indiscriminate use in Graves' disease, says: "I am convinced that it is wrong systematically to repudiate the thyroid treatment of exophthalmic goiter. I have obtained excellent results with this form of treatment of that affection" (p. 161).

I feel tempted to stop right here and say, as does O. Baumgarten,[12] in a recent brief summary of thyroid therapy, that all the rest is purely empirical. Not that knowledge gained by empirical means is to be

10. Mabille: Thèse de Lille, 1898. Cited by Shaw, *loc. cit.*
11. Gauthier, Gabriel: Les Medications Thyroidiennes, Paris, 1902, p. 160.
12. Baumgarten, O.: Med. Klin., 1907, No. 47.

ignored, for it is really experimental if carefully acquired, and is, as we all know, often of great worth. Not that there may not be some good in other uses of thyroid extract. It may be of value in some cases of delayed union of bone; Gauthier's histories are encouraging. The reports of its efficiency in some menstrual difficulties are worth noting, and especially as there is some not clearly understood relation between the thyroid and the sexual organs. Anything offering help in puerperal eclampsia should be looked into. The future may show definite virtue in some skin lesions.

But merely to read the long list of diseases in which it has been employed with reported favorable results will of itself convince one that there is something wrong somewhere. Acromegaly, chlorosis, asthma, epilepsy, rickets, tuberculosis, leprosy, lymphoma, intestinal hemorrhage, diabetes, amenorrhea, tonsillitis, syphilis, osteomalacia, gigantism, rheumatoid arthritis, chronic rheumatism, tetanus, tetany, puerperal eclamsia, convulsions of childhood, delayed union in fractures, hemophilia, cancer of the breast, psoriasis, ichthyosis, scleroderma, alopecia, acne, paralysis agitans, progressive myopathy, cardiac arrhythmia, tachycardia, Stokes-Adams disease, migraine, high blood-pressure conditions, angina pectoris, sclerosis of the middle ear, adenoids, Addison's disease, neurasthenia—and these are not all.

It really seems as though somebody must be mistaken. Errors in diagnosis, faulty observations of symptoms, ignoring the natural tendency of many untreated diseases to improve or to fluctuate from time to time in their manifestations, failure to take into consideration the psychic element with improvement due to suggestive influence, poor judgment in reaching conclusions, generalizing on the basis of isolated instances, are responsible for many of the statements favorable to thyroid therapy. As said at the beginning, what is needed for the establishment of thyroid therapy on a firm basis is more extended and searching unbiased clinical observation, with deliberate expert, concentrated pharmacologic study of the remedy. In this manner, and in this manner alone, can be learned the sober truth concerning this mysterious agent, so potent for good or for harm.

ADDRESS BY DR. O. J. GWYNN, PRESIDENT OF THE TRI-CITY MEDICAL ASSOCIATION.*

Gentlemen: We are living in the midst of a new era in the history of the practice of our noble profession. Could we but look back a few years we would observe that the conditions surrounding the practice of medicine and the status of the profession were entirely different from those that obtain to-day and which we now enjoy.

At so recent a time as my own boyhood the profession was groping in the shadows of darkness and benighted empiricism. In those days the practice of medicine was barely an art and scarcely a science. Under

* Delivered at the inauguration of officers at the Elk's Club Room, Granite City, Ill., Jan. 5, 1910.

such conditions public confidence in the legitimate profession was slight, and every man and woman claimed to be more or less a physician and did not hesitate to assume the responsibility of treating themselves and their neighbors. Under such a chaotic state the public fell an easy prey to evil exploitation by dishonest quacks and nostrum vendors. It was no uncommon thing for the unscrupulous, who held out extravagant claims for their wonderful powers to cure and to heal, to prey upon the credulity of the sick and the suffering. And it is, indeed, with shame that we have to acknowledge that, to a limited extent, the same condition exists to-day—this day of progress and enlightenment.

Singled from the misty haze of this chaotic and disorderly state of affairs in the olden days, here and there could be found a few satellites, talented gentlemen, men of superior intelligence, who devoted time and money to physical research and study, and who, through their scholarly attainments and undaunted labors, maintained the dignity of the profession and brought it from the evil shadows of imposture, ignorance, prejudice, prostitution and corruption to the light of learning, honor and truth.

We of to-day, who enjoy the fruition of their labors, owe to them a debt of gratitude. Humanity owes to them a lasting debt of gratitude, which cannot be measured by monetary standards nor paid by a lifetime of praise.

We can scarcely realize the many obstacles, embarrassments and discouragements that beset our predecessors in their labors and in their studies. The cosmogony of the human mind is such that the battle between knowledge and truth on the one hand and ignorance and prejudice on the other has from the earliest history of the human race been a difficult one. In the days to which I referred, medicine and surgery as an art and a science had made no substantial progress for a great many years, and its established truths and set principles were few. This fact, in connection with the one just mentioned, made the progress of the pioneer investigator doubly slow and doubly hard, and, too, left the field for charlatanry and dishonesty both large and lucrative.

And it must have been, indeed, with no small degree of chagrin and disappointment for the man of letters to find himself deserted in the field of his endeavors and observe the masses of men swayed and influenced by the bombastic, extravagant and dishonest claims of the advertising miracle-worker, who always claimed to be the greatest successful medical sensation of the age; and, on the other hand, to read, placarded along the public highways and emblazoned in the public press, of the marvelous, mysterious and mystifying cure-all properties of patent medicines that daily poisoned the bellies and bodies of peoples.

As truth will prevail against error and intelligence against ignorance, the progress of the science in these latter years has advanced with the strides of time, so that to-day, while by no means in a perfect state, it stands ready and capable, through the medium of education and instruction, to permanently eradicate chicanery and quackery, with its inevitable lying and deceit, and to cause the fraudulent patent medicine

fiend to pour his nauseating nostrums into the river of oblivion. The single factor that has brought about these beneficent changes has been education, both on the part of the profession and the people.

While we congratulate ourselves upon these improvements, we must not lose sight of the fact that the millenium has not come to us yet and that we are still in a developmental state. The educated physician need not refer often to a written code of ethics, for his innate sense of good breeding should, under all circumstances, prompt him to so conduct himself towards his fellow-physician as at no time to give offense to him nor impinge upon those rights and prerogatives which are his alone.

Professional ethics, both written and unwritten, are founded upon those amenities of life which should exist between one gentleman and another in their daily contact and intercourse with each other. It is to be hoped that the time is past, both in this community and in every other, when a member of our organized associations and societies will so far forget his self-respect and those inviolable principles of character essential to good breeding, and which should have been instilled into his young heart during the days of his youth, as to become so mean, contemptible and debased as to treat a fellow-practitioner with discourtesy and disrespect, which, we blush to say, was so common during the days of uncouth, barbarous illiteracy, the days of quackery and reprobation.

There is another subject to which I wish to call your attention, and that is newspaper notoriety in connection with serious accidents and sickness, or with any work which we may do in our professional capacity. There is nothing which so tends to demoralize the high ideals and standards which we maintain to-day, and which has taken so many years to achieve and acquire, as the frequent mention of a physician's name in the public press in connection with the work which he is doing or has done. It savors so much of the villainous advertiser of old that he who permits it in this day and age is reprehensible in the extreme. It is demoralizing to the individual, it is demoralizing to the profession and transcends that dignity which should be correlative with the noble purpose for which the profession stands. I do not find fault with the press. The fault is ours, because no one can so thoroughly appreciate the multifarious reasons why this is so than we ourselves.

A physician who has his name constantly in print in connection with work which he does can have none but dishonorable motives in doing so. He can have but one object in view, and that is to create a false status for himself in the eyes of the people, with the ulterior purpose of gulling them upon every possible opportunity. And, further, a physician of this depraved character usually has little regard for truth in its sacred simplicity and will stoop to any trick to further his own interests and often deceives the newspaper officials into publishing exaggerated statements, half-truths and downright falsehoods, pertaining to himself. It is our solemn duty to at all times warn the public against the machinations of such a person.

Besides the demoralization and dishonesty pertaining to newspaper notoriety, there is an element of injustice which we should not overlook.

The power of reflection and analysis of the average human intellect is often meager and seldom exercised. By way of illustration, we will suppose two persons have injuries which are identical; one recovers quickly, the other lingers, an amputation becomes necessary and the patient dies. The public, drawing their conclusions solely from the few naked facts published by the press, are too prone and sometimes eager to unjustly praise the one attending physician and condemn the other. They would have no way of knowing, nor would they understand even if they knew, that the latter had a malignant disease prior to his injury, which would preclude the possibility of his recovery. I cite this as an example, but it could be varied in thousands of ways to cover the entire range of medicine and surgery, and in each instance an injustice to all parties concerned would be apparent.

Not long ago the Madison County Medical Society passed a resolution requesting the newspapers of the county to refrain from mentioning the names of physicians in connection with their work, and I am glad to note in the December issue of the Illinois Medical Journal that the physicians of St. Charles, Ill., have done the same. An editor of a daily paper in St. Louis, commenting upon the action of the Madison County Medical Society, made the statement that doctors were afraid of publicity. This was certainly a short-sightedness on his part, inasmuch as such a statement could only be indicative of a lack of information upon the subject, also a misconception of the motives of such a body of high-minded, intelligent and conscientious gentlemen as compose the Madison County Medical Society.

I am here to say to you, gentlemen, and I wish my voice could reach the furthermost corners of the earth, that there is scarcely a physician in this association or the great American Medical Association who, so far as he individually is concerned, would have any fear whatsoever to have every professional act that transpires in his office or at the bedside recorded in its minutest details in every journal and periodical, in every newspaper, in every known language all over the entire civilized world, should necessity demand such a possibility. It does not require, however, any astuteness of intellect nor acuity of reason to know and understand that to do so would be opposed to public policy and opposed to public morals, even though the patients themselves would consent. I wish to emphasize upon this occasion that the practice of medicine is entirely a private matter, and it only becomes a public one when it pertains to public health and public morals. The relation between physician and patient is one of privacy and confidence, which should be held inviolable under all circumstances, except when ordered otherwise by a court of competent jurisdiction.

Another subject which I wish to mention before closing is our lax business methods. When we obligate our patients to us by rendering them a service they should be told that they are expected to liquidate that obligation. All patients should be taught that they are expected to pay a fee at least commensurate with their ability to pay, and if unable to pay they should be given a receipt in full, showing that the obligation

has been canceled. To not pay one's debts is a crime, both in the eyes of God and in the eyes of man. By not insisting that these debts be paid we encourage dishonesty. Did you ever stop to think of this? How many physicians are there who, if told that they are accessories to a crime, either before or after the fact, would not hold up their hands in utter indignation and declare it untrue? By not collecting a fee for our services we place temptation in the way of those who are morally weak, encourage dishonesty and, indeed, are directly responsible for the downfall of many who would otherwise have remained good and upright citizens. As many a drunkard can trace his downfall to the temptation of the first drink, so also many a person in this broad and beautiful land of ours can trace his duplicity and dishonesty to the encouragement and temptation offered him by the physician who so easily allowed him to beat his bills, and, going from bad to worse, became an irretrievable moral pervert. Let us not lend ourselves as accessories to such a condition, but rather collect our bills as a duty which we owe to our patients and to society at large.

I have complained of possible discourtesies, of too much newspaper notoriety, also of our sometimes lax business methods. You might think, gentlemen, that I have recently joined a knocker's club, but my views are merely expressed as the president of your body, and they are open for your criticism. Should I be wrong, I wish to be corrected. Yet let us not forget that these three stigmata remain as pernicious blots upon the fair name and noble escutcheon of our beloved profession, and that even now we should so breathe the spirit of reform as to devise means for their eradication.

In closing I wish to again thank you for the honor which you have conferred upon me, and hope that the harmony and spirit of good feeling among us, which has been so evident during the declining days of the old year, may be fostered and propagated from day to day in the year which we have so auspiciously begun, and that the fraternal spirit will continue to grow until each of us will feel it to be an unequivocal duty to guard well and protect the welfare and interests of the other.

MEDICAL INSPECTION OF PUBLIC SCHOOL CHILDREN.

G. W. Rice, B.S., M.D.
CHAMPAIGN, ILL.

The first steps leading to the inspection of public school children were taken as early as 1833, when France charged the school committees to keep the school premises in a sanitary condition, and in 1837 passed laws requiring school matrons to look after the health of the children in their schools. In 1842 and 1843 other laws were passed extending the power and scope of the school inspector. The present law in France dates from 1874 and provides for the appointment of school medical inspectors, makes appropriations for their salaries and defines their duties.

At the present time medical inspection of school children is provided for in the following countries: France, England, Sweden, Switzerland, Bulgaria, Japan, Argentine Republic, Chili, to some extent in Egypt and quite extensively in Germany. The United States is the last civilized nation to take up this work, and here only one State has made the work mandatory by statute. That there should be any opposition to the medical inspection of school children by parents, school men, school boards, boards of health, physicians or legislators is lamentable. Nevertheless it is true, as is shown by the withholding of legal authority in some places to carry out this work.

It is a well-known psychologic fact that the child gains knowledge of the external world through all of the special senses. Therefore, if one or more of these avenues of entrance to his mind is closed or hindered, he receives only blurred ideas, and from these he cannot fail to form any but imperfect conclusions of external things. Further, it is an accepted fact that the work required of the pupil of average strength cannot be done, without injury, by the pupil of less than average strength. The school being the only governmental department that directly assumes control of children's lives, and at least nine out of every ten American children being subject to this control during the years from seven to fourteen, the formative period of the child's life, why should it not be the duty of the state to determine the cause of the weaknesses of its wards, whether it be from lack of nutrition, bad sanitation, defective hearing or vision, or any other defect, point out the condition to the parent and advise that the child be taken to the family physician or to a competent specialist for treatment?

The British educational report states that pupils should be classified according to anthropologic measurements and medical inspection with respect to their physical abilities, placing those together who are physically able to do without injury the full amount of school work required of their age, and in another division those whose physical development makes it probable that they cannot do this work without injury, and who, therefore, demand special care and watchfulness. Thus medical inspection would seek to secure for every child, normal and defective, conditions of school life compatible with that full and effective development of its organic functions, its special senses and its mental powers, which constitutes a true education.

Medical inspection should have two objects in view—first, to protect the community against the spread of contagious diseases and to keep the school premises in a sanitary condition; second, to detect physical defects. In regard to the latter I wish to quote again from the British educational report, as follows: "The argument in favor of the physical examination of school children for the purpose of detecting defects is based on the recognition of the important bearing of the physical and mental condition of the child on the whole process of education. It recognizes the necessity for favorable physical and mental environment by emphasizing the importance of the surroundings upon the personality of the individual child. It seeks to secure for each pupil such condi-

tions of life as will promote a full and effective development of its bodily strength and mental power."

Medical inspection for this purpose has been adopted in all the leading countries, the United States, however, being the last to do anything along this line until within the past few years. The work has now been taken up by seventy cities outside of Massachusetts, which State has made the work mandatory by statute.

Among the plans examined and in use by many cities here and in Europe, the Wiesbaden plan deserves special mention. In Wiesbaden all pupils entering school are subjected to a systematic physical examination by competent physicians. This includes an examination of the heart, lungs, throat, spine, skin and sense organs, and boys are examined for rupture. The findings are entered on a report card, which the child takes from grade to grade. Reexaminations are made at the end of the third, fifth and eighth school years. Defects requiring medical attention are reported to the parents.

In South American countries, Argentine Republic has the best system. Here they provide for the vaccination of school children, examination of the sanitary conditions of school buildings, prevention of contagious diseases and scientific lectures and medical advice are given to teachers and pupils.

In the United States the first regular inspection of public school children was adopted in Boston in 1892. In 1894 fifty physicians were appointed and the city divided into fifty districts. In 1907 Massachusetts passed a law requiring every town and city throughout the state to maintain medical inspection of public school children, with competent physicians in charge. Examinations of the school children are made annually for the detection of physical defects. Tests for the detection of poor vision and poor hearing are made by the teacher. Instructions to teachers and test cards are provided by the state, and in some places competent oculists are employed to give lectures to teachers and school principals on methods of testing for weak vision and hearing.

New York at the present time has the most complete system of medical inspection of public school children. This was adopted in 1897 and is under the control of the Board of Health. One hundred and thirty-four medical inspectors were appointed, with certain districts to oversee. After morning inspection for the detection of contagious diseases the inspector receives the children of a class in turn in a special room and examines them for defective sight, hearing and physical defects. Parents are notified of all defects by postal card, stating: "Take the child to your family physician for treatment and advice. Take this card with you." Attached to this card is another, which the family doctor fills out, telling what action has been taken, and this is mailed to the chief medical inspector. If no reply is received the case is given further attention, and in case of contagious disease the child is not readmitted to the school until treatment has been instituted and a physician's certificate obtained. In 1896 there were 78,401 children examined, and 56,259, or 71.7 per cent, required treatment of some kind. The conditions found

were as follows: Bad nutrition, enlarged glands of the neck, chorea, heart disease, lung disease, skin disease, deformities of the spine, of the chest and of the extremities, defects of vision, of hearing, of nasal breathing, of the teeth and of the palate, enlarged tonsils and defective mentality.

In regard to the prevalence of certain defects, that of sight seems to carry the day. Dr. Herman Cohn, of Breslau, first investigated this subject. He examined in 1865 the children of thirty-three schools in Breslau. Out of 10,050 pupils of all grades he found 1,004 near-sighted. He also found in the first half of the first school year less than 1 per cent were near-sighted. At eight and one-half years 5 per cent were, and at seventeen and one-half years of age this had increased to 20 per cent. Thus near-sightedness increased among the students of his city until 63.6 per cent of those who had been in school fourteen years were near-sighted.

The examination of hundreds of thousands of children in all parts of the world shows that from one-fourth to one-third are defective in vision to the extent of requiring a specialist's care if they are to do the work properly and without permanent injury to their eyes. Also, that 5 per cent are defective in hearing to such an extent as to interfere with their work, that a very small part of these defects are discovered by the teachers or are known to them, to the parents or to the children themselves.

Many backward, retarded, listless or dull pupils are so because of the handicap of poor vision, defective hearing, bad teeth, bad digestion, constipation, anemia, defective nasal breathing, enlarged glands or other defects. The child gains the reputation of being listless and stupid. He hates school and leaves long before he has completed the grammar grades. Has the state done its duty by him? It undertook to give him an education when the avenues to his mind were clogged, and it failed to point out to him or to those responsible for him the physical defects under which he labored.

It is not known to what extent physical defects cause backwardness in children. Not enough work has been done along this line of investigation to draw general conclusions. The best has been done by Dr. Cornell, of the University of Pennsylvania. He studied the children of a number of Philadelphia schools and came to the conclusion that the class standing of those suffering from physical defects was not equal to that of normal children. In another investigation of the children of five Philadelphia schools he divided them into two divisions—the first, those so-called exempt children or those whose work was so satisfactory that they were passed to higher grades without examination, and the non-exempt, or those whose work was less satisfactory and required an examination for promotion. The following results were obtained: Exempt, the number examined 907, per cent defective 28.8; the non-exempt, the number examined 687, per cent defective 38.1. Another investigation was conducted to determine, if possible, the degree of harmful influences of the nose and throat. The children were divided, ac-

cording to their class standing, into "bright" and "dull" divisions, and there were found three times as many defectives in the dull division as in the bright.

In conclusion I would say that medical inspection of public school children should become an integral part of our public school system, supported from the same funds, and should extend even to the rural districts. It should have for its object the detection of and the prevention of the spread of contagious diseases, also the detection of physical defects, to which the parents' attention should be called.

The prevention of the spread of contagious diseases should be under the control of the board of health. Inspection for the detection of the physical defects should be under the control of the board of education. The medical inspector should receive his appointment by civil service examination and should be paid an adequate salary from the school fund.

"Medical inspection of public school children promotes efficiency in our schools, protects the community and preserves the lives of our children."

Russell Building.

—The Chicago Health Department wound up a recent campaign against pneumonia with the following advice: "Eat and drink lightly. Keep the body right. Do not neglect bad colds. Keep in the fresh air. Avoid badly ventilated places. Keep out of crowded places. Treat pneumonia as a contagious disease." This is good advice surely, but in spite of it there were 605 deaths from pneumonia in the city during the four weeks of the campaign. The *Bulletin* reaches the medical profession, the teachers and the ministry. Can it be possible that these leaders do not pass the good health tips on to the public? The department is beginning a vigorous campaign of dairy farm inspection with a view of requiring all milk sold in the city after June 1 to be the product of tuberculin-tested cows or be pasteurized. With increased sanitary requirements and the semi-annual row on between the dairymen and the milk companies over contracts, the public need not expect much relief from the high price instituted last year. Indeed, a "cheap" milk is too expensive at any price. The *Bulletin* is fully appreciated by the health officials of other cities, some of whom have copied its form, and in at least one case adopted its caption, "School of Sanitary Instruction." Another recent publication borrowed the *Bulletin's* story, "Fighting Tuberculosis," practically verbatim.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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MARCH, 1910.

MEETINGS OF THE COUNCILS ON MEDICAL EDUCATION AND MEDICAL LEGISLATION IN CHICAGO.

The annual conferences of these councils were held in Chicago recently and attended by a large number of prominent men from every state in the Union. Matters of vital importance to the general public were discussed and many subjects were brought a long way toward settlement.

Again, Chairman Bevan took occasion to call attention to the intolerable conditions prevalent in many of the existing medical colleges.

Again, it was shown that Chicago itself is the worst offender in America. Only three of the thirteen medical colleges in our metropolis were found acceptable and six called entirely unacceptable.

Again, the Illinois State Medical Society must ask itself whether there is not here a condition of affairs which demands its immediate and effective action.

Again, the Illinois State Board of Health was held up to ridicule and placed in a most unenviable position. This was especially true during the delivery of Judge Olson's address. At its conclusion the President of

the State Board of Health endeavored to mitigate the severity of the castigation by a statement that the Board had endeavored to secure a change in the law but was not sustained by the medical profession. If it is true it really shows that all classes—the public, the lawmakers and the medical profession—lack confidence in the State Board of Health as at present constituted. Certainly there is an imperative need for an immediate change in the administration of the health and medical licensure laws in Illinois. We quote the following brief extracts from the reports made in the daily papers. Dr. Bevan said: "We should compel these unsatisfactory schools to come up to the standard or else get out of business. The ignorant, poorly-trained and ill-qualified doctor is too great a menace to the country to be allowed to practice. The great public does not understand the importance of health precautions. He is a foolish and unfortunate person who selects a poor medical adviser who cannot give him the best of scientific treatment. Many of us here know the difference between the modern, intelligent medical care and the ignorant, charlatan care of the sick. We, who are medical men, know of the great difference between intelligent and ignorant, between trained and untrained medical care. But the great public does not know, it does not understand.

"To-day medicine is a science, and it is the most important of all sciences, both from the standpoint of the welfare of the individual and the welfare of the community. The application of the known facts of modern medicine by efficient national, state and local boards of health would save in this country thousands of lives and millions of dollars each year.

"A small fraction of the money appropriated to great national undertakings like the Panama canal and the projected deep waterway in the Mississippi Valley would, if properly used, insure *efficient boards of health* throughout the country and would be of enormous benefit in the prevention of suffering and disease and would bring to the community much greater benefit than could be obtained by any other national movement."

Judge Olson said: "There are too many convicts engaged in the practice of medicine, and I urge you to work for legislation to establish license boards with power to revoke licenses of physicians guilty of immoral conduct and for such offenses as dishonesty, conviction of crime and addiction to the drug habit. The bar associations are constantly working to maintain a high standard of morality in the legal profession and are constantly demanding revocation of certificates to practice, while the medical associations show no activity in behalf of the honor of their profession, though there are certain limited powers in Illinois of revocation of licenses." His address contained a criticism of the character of medical men who appear as expert witnesses in the courts and laid the blame for this on the lax license system in vogue. It made a general arraignment of mental healers and osteopaths, declaring that all these

should be required to pass a regular physician's examination, including medicine and surgery.

The votes of the members of the committee on a number of questions showed the majority favored the following propositions:

A separate board of medical examiners than the State Board of Health.

A non-sectarian board.

Appointment by the governor on nomination of candidates by the medical associations.

No teachers from the medical schools on the board.

Graduation from a reputable medical college as a requirement for the candidate to be licensed.

Combined written and clinical examinations.

Examining board to have authority to determine good standing of medical colleges.

MEDICAL POLITICS.

The article on "Some Absurd and Unfair Features of Medical Politics," by G. Frank Lydston, appearing in this issue, is a fair sample of the literature which is being circulated for the express purpose of creating dissatisfaction among a certain element in the organization for reasons which are readily apparent to any thinking person.

To anyone familiar with the principles of the organization, the fallacies and misrepresentations contained in the said article are evident.

In the first place, the author mentions a special situation in a single constituent county society, and then without attempting to explain the reasons for its existence, holds it up as a terrible bogey undermining the very foundation of the A. M. A.

A similar attempt was made about a year ago in the Chicago Medical Society to raise the same bogey of multiple votes of members of affiliated societies for councilors, but at a special meeting of the general society, which was largely attended, and which was called to consider this very question, it was practically unanimously decided that the advantages of having a representative from each of the special societies in the council of the general society so completely outweighed the fact that the members of the special societies thus had an opportunity of voting for one more councilor than the members of the general society had, that the multiple votes bogey faded into insignificance.

There are now, and always have been, a very few, perhaps half a dozen, men who are working in allied sciences—for instance, biology—who are not practicing physicians, who yet, by special agreement, have been permitted to become members of or to retain membership in some of the special societies of the Chicago Medical Society, without being

members of the general society; yet it is extremely doubtful if any one of them every exercised the right of suffrage in the society to which he belongs.

Isn't it wonderful how the sanctity of the ballot—the very bulwark of liberty—is being polluted and how the very foundation of our great organization is crumbling to ruin?

Honest and helpful criticism is always welcome, but it should be based on a knowledge of the facts, and should be made in the interest of bettering conditions and not for destructive purposes.

ILLINOIS DRUG ASSOCIATION.

Our attention has been called to a communication sent to many Illinois physicians by one F. W. Egel, who signs himself Chairman of the Organization Committee of the Illinois Drug Association, 4550 St. Lawrence Avenue, Chicago. He makes remarkable promises in his circular letters to dispensing physicians. Mr. Egel places the letters, "P.D.," after his name, and we are at a loss to know what the meaning of these letters is. The official journal of the National Association of Retail Druggists has the following article regarding Mr. Egel and his association, and under the circumstances we feel like suggesting that our members use a little caution in subscribing to the organization promoted by this man:

"Of all the crank and queer associations of which we have ever heard, the 'Illinois Drug Association' takes the plum. This association is an association of physicians who dispense, and, so far as we are able to learn, consists of one F. W. Egel, P.D., and the 'headquarters' are in a residence district in Chicago, namely, at 4550 St. Lawrence Avenue.

"The object of the association is, according to a circular letter sent out, to enable the members to purchase their drugs, pharmaceuticals, medical and surgical plasters, absorbent and antiseptic cottons, bandages, printed matter, etc., through the association in such quantities as will meet their immediate requirements, at prices as low as if they were buying in large quantities direct from the manufacturer. It has been stated by those in a position to know that the association will cut the drug bills of many physicians in half, etc.

"If the promoter of this scheme is sincere in this matter, we can truthfully and sincerely pity the dispensing doctor, or, rather, his patients.

"Quality No Object.—The quality of the average physician's supply-house medicaments is already way below all recognized standards, and when the price of these is cut in half it is easily assumed what the quality of the preparations furnished by this association will finally become.

"The public has stood for a good deal of cheap and inferior medicine that has been dished out to them by the unqualified medical dispenser, and as a result the public is gradually losing confidence in all medicines and is seeking other methods to cure diseases which do not include either good or bad medicine.

"*Notes* would advise doctors to leave Egel and his scheme alone, first, because it probably means cheap and inferior medicines, and, second, because Egel apparently has no substantial backing and those who pay him money may lose it."

THE MODERN TREATMENT OF PNEUMONIA.

The following rules issued by the Chicago Board of Health are worthy of republication as evidence of the remarkable changes which recent years have brought about in the treatment of pneumonia. Undoubtedly, many practitioners are still treating pneumonia by the old method of excluding drafts and paying no attention to the destruction of the sputum. To these we commend the consideration of these rules:

"There is another and very good reason for reporting—pneumonia is a contagious disease. Usually it is far less contagious than scarlet fever and even less contagious than consumption, but at times it is much more contagious than consumption and nearly as contagious as scarlet fever. Occasionally it will spread a good deal in a hospital ward. It can be caught from those that are sick with it and also those that have had it. So, then, if a person has pneumonia:

"1. Report it to the Department of Health, giving the name, address, disease and other information asked for on the contagious disease card.

"2. Put the patient's bed where plenty of fresh air can blow over the patient, just as you do for a consumptive. A good draft is good medicine.

"3. Get rid of the rugs and curtains and other things which encumber the room.

"4. Receive all of the spit on cloths, then burn the cloths.

"5. Keep the patient's mouth, nose, throat and teeth clean.

"6. Keep all unnecessary people away from the patient.

"7. As the patient gets well keep cleaning the teeth, mouth and nose and burning all the spit.

"8. The recovered patient must always thereafter refrain from spitting recklessly; from overdrinking; from breathing bad air and from neglecting his 'colds'—for pneumonia once, helps toward pneumonia twice. Then, in thinking of pneumonia, remember that it comes to those who do not keep themselves right and also that those who have it pass it on to others.

"REPORT PNEUMONIA."

THE STATE DIRECTORY OF PHYSICIANS.

As intimated some time ago, the State Medical Society has sent to every member in good standing a copy of the Directory issued by the press of the American Medical Association and brought up to the date of January, 1910. This, we believe, is the very best and most accurate list of physicians ever published in the state and is alone worth the amount

paid by every member of the State Society for one year's annual dues. So far as we can judge, the information is entirely accurate, and we call attention to another desirable feature in the approximately accurate information as to the population of each city and town which is given. We have already cautioned our members about disposing of these volumes, and we again call their attention to the desirability of retaining this Directory not only as a gift of the State Society, but for its future value as an index of the number and the names of practitioners in Illinois in January, 1910.

FURTHER DISCUSSION OF MEDICAL EDUCATION.

In this issue of THE JOURNAL will be found two communications bearing on the subject of medical education in Illinois. We have commented on this subject in previous issues and published correspondence discussing this question of vital interest to the profession of Illinois. The chairman of the judicial council of the Illinois State Medical Society has quoted from the exhaustive reports of the Council on Medical Education of the American Medical Association, the Carnegie Foundation, and the Committee on Medical Education of the Illinois Medical Society, all of which have studied into the question of educational standing of the medical schools of this state. We believe this subject is of vital importance to the profession at large and merits our most careful consideration and attention. The advances that have been made in medicine in recent years have been along the line of preventive medicine and sanitation, and the medical profession must be responsible, through its own efforts and its representatives on the various boards of health, for the promotion of public health and the protection of the people against any and all medical frauds. We commend these communications in this issue to our readers' most thoughtful consideration.

Correspondence.

MEDICAL EDUCATION IN ILLINOIS—DR. EGAN REPLIES.

DR. CARL E. BLACK,

Chairman Judicial Council, Illinois State Medical Society.

My Dear Sir:—I have noted, with no small degree of interest and pleasure, the communication bearing the caption, "Medical Education in Illinois," which appears over your signature in the February number of THE ILLINOIS MEDICAL JOURNAL. I am glad that you have chosen to answer the remarks contained in the "Advance Sheets" of the *Bulletin* of the State Board of Health for December, and to answer them in a signed letter, as your action indicates that it is now possible to have a frank discussion of those matters which, in the past, have been the subject of vague insinuations and indefinite allusions.

I am glad, too, that the editor who recommends your communication to his readers "as good food for thought" has announced his intention of making "further comment in a later issue." I trust that he will do so, and over his own signature, in order that I may know just where to place the responsibility for the comments made.

While it is indeed gratifying that you have come out in the open, and have made an attempt to defend the charges made against the Illinois State Board of Health by you, through the medium of the Southern Illinois Medical Association, it is to be deplored that you have so studiously ignored so many of the points at issue and have dwelt to an unnecessary length upon others not at all germane.

In the preamble to the resolution prepared by you, and adopted, at your instance, by the Southern Illinois Medical Association, you allege that "from several sources it had been brought to the attention of the Southern Illinois Medical Association that Illinois has become one of the 'rotten spots' of the United States in medical education and medical licensure," while in the resolution itself, based upon this preamble, you inquire why "Illinois should bear the stigma of being one of the plague spots of this country in medical education, medical examination and medical licensure."

You were challenged by Dr. Webster and myself, in the December *Bulletin,* "to point out any responsible utterance or writing . . . in which Illinois has been alluded to as one of the plague spots of this country in medical education, medical examination and medical licensure."

Instead of accepting this challenge, and "making good," as the members of the Illinois State Medical Society naturally look to you to do, you make vague references to "dissatisfaction with results obtained in medical education, examination and licensure"; you charge that Illinois is placed in the lowest rank in medical licensure; you dwell upon personal abuse—as if some one had abused you; you deplore that the Illinois State Board of Health is "unable to give a satisfactory explanation of why Illinois should be published to the world as a rotten spot"; you dwell upon the utterances of the Chairman of the Council on Medical Education of the American Medical Association in 1906, as to medical education in Illinois in 1904, but carefully ignore the statistics, presented in the December *Bulletin,* which prove beyond question that Illinois was not entitled to the stigma that had been placed upon it.

You make a pen picture of the medical colleges which in your opinion should be found in Illinois, and follow up with invidious comparisons between the present Secretary and his honored predecessor, the late John H. Rauch. Then, after maintaining that the resolutions in question "simply ask why the board in Illinois has failed to do its plain duty under the law," you pass from "medical education" to "medical examination and licensure," and charge (first) that Illinois examines too many applicants—which is a matter of opinion; (second) that the percentage of failures in Illinois is one-third less than the states bordering on Illinois—which is incorrect; (third) that Illinois sends out far more physicians under reciprocity than she receives—which is true and which inci-

dentally reflects favorably upon the standing of the Illinois certificate throughout the country.

Finally you assert that "of Illinois graduates examined by the secretary of our state board, only 5 per cent. failed, while of the graduates of the seven states adjoining Illinois examined at home 15.5 per cent. failed —200 per cent. more than Illinois"—which assertion, like others preceding it, is entirely incorrect.

But what of the "several sources" through which it was brought to the attention of the Southern Illinois Medical Association that Illinois had become one of the "rotten spots," and when and where and by whom has Illinois been characterized "as one of the plague spots of this country in medical education, medical examination and medical licensure?" Why do you evade the issue? Why all this sophistry and subterfuge? Why don't you "play ball?"

Prefatorily to a reply to your letter—and here I will ask you as Chairman of the Judicial Council of the Illinois State Medical Society to publish this communication in the March issue of THE ILLINOIS MEDICAL JOURNAL—I will say that in view of the facts set before you in the December *Bulletin,* which facts you do not in your reply attempt to refute or even call in question, I charge that the premises of the Southern Illinois Medical Association resolutions are false, unfounded and unsubstantiated, and I charge also that you know them to be false, unfounded and unsubstantiated.

Your explanation as to the genesis of the resolutions prepared by you; your reference to Dr. Wiggins' remarks on the evening of the first day's session, and the intention of Dr. Wiggins and others to have me "answer certain questions in open meeting next day," and your allusions to a consultation on the subject of a resolution with Dr. Wiggins, Dr. Hamilton, and others, call for but brief attention from me. It is sufficient to say that Dr. Wiggins was *personally advised* during the morning of the first day's session that I could not attend the meeting, and that a formal announcement to this effect was made in open meeting during the morning of the first day's session. As to Dr. Hamilton I have Dr. Hamilton's assurance, twice repeated, that he had no conversation with you regarding the resolutions prior to the time when you handed them to him in the meeting on the afternoon of the second day's session and asked him to read them!

Your statement that "you have no reply to make to the personal attack" is well calculated to invoke sympathy, but as it happens no personal attack has been made upon you. References have been made only to your actions as Chairman of the Judicial Council of the Illinois State Medical Society, in which capacity you called upon the Governor of Illinois in March, 1908, in which capacity you attended the 1908 and 1909 meetings of the Illinois State Medical Society, in which capacity you were invited to attend the meeting of the Southern Illinois Medical Association.

But you do not deceive even yourself when you say that you "have no personal criticism of any officer or member of the State Board of Health." You know better than this, my dear Doctor Black, and your sneering ref-

erences, twice repeated, to the examinations "conducted by the Secretary of the Illinois board," and to the "Illinois graduates examined by the Secretary of our state board," belie your assertion.

Parenthetically, you know well that the Secretary of the Illinois State Board of Health does not conduct examinations, and does not examine Illinois graduates or those from other states. You know well that the Secretary of the Illinois State Board of Health merely supervises the examinations; that he neither prepares questions nor rates answers, and takes no part in the grading of the papers of the applicants.

As to the charges made by the Chairman of the Council on Medical Education at the meeting of May 12, 1906, it was frankly admitted in the December *Bulletin* that such charges had been made, and it was stated that the table upon which the charges were based would be found on a certain page in the published proceedings of the Conference, a reference to which proceedings would speedily reveal the identity of the essayist. In view of this, your contention that it was our desire "to suppress the source of the language quoted" savors of the ridiculous.

However, that this is the one and only published utterance or comment in which Illinois has been characterized as a "rotten spot" or as a "plague spot" in medical education is not disputed by you in your communication. That neither medical examination nor medical licensure was referred to in any way by the essayist is not denied by you.

Since you find it necessary to go back to the data of 1904 to find even one charge, of responsible origin, that Illinois is a "rotten spot" in medical education, let us go back to that period and weigh the evidence upon which this isolated stricture was based.

The charge made that Illinois, Missouri, Maryland, Kentucky and Tennessee were the "five especially rotten spots" was based entirely upon statistics of state board examinations for 1904, published in *The Journal* of the American Medical Association, May 6, 1905, and abstracted in a table presented by Dr. Bevan, in which were shown some thirty-eight medical colleges of seventeen different states having a percentage of failures of over 20 per cent. before the several state boards during 1904.

But, as it was plainly shown in the December *Bulletin*, this self-same table absolutely and unequivocally demonstrates that neither in the percentage of failures of the applicants in colleges nor in the percentage of failures of the colleges was Illinois entitled to the "undesirable position" accorded to it by Dr. Bevan.

Furthermore, this table shows that Kansas, Kentucky, Tennessee, Maryland, Missouri, Louisiana, Minnesota, North Carolina, Ohio, the District of Columbia, Michigan, Nebraska, California and Massachusetts had more unsatisfactory records than Illinois.

This is not a statement of opinion, but an undeniable and indisputable fact set forth before you in the December *Bulletin* and tabulated for the purpose of perfect elucidation, but entirely ignored by you in your reply, although you make reference to "comprehensive tables" which, if you read understandingly, would soon convince you that Dr. Bevan had made an error in his conclusions.

This error is the more evident when we note that Dr. Bevan omitted Ohio from the list of "rotten spots," notwithstanding that Ohio showed a much higher percentage of failures in individual colleges than was found in Illinois. That Ohio was so omitted was stated in the December *Bulletin,* but you have chosen to disregard this fact, as you have others in connection with the interpretation of the figures for 1904.

I cannot attempt to make comparisons between the work which I have accomplished during my thirteen years' incumbency of the secretaryship of the Illinois State Board of Health and that accomplished by my predecessors any more than I can attempt to answer the attacks made upon me in the editorial in the January, 1910, issue of THE ILLINOIS MEDICAL JOURNAL through the shrouds of two former secretaries. But I would be more than pleased to enter into a discussion with you through the columns of THE ILLINOIS MEDICAL JOURNAL as to the relative merits of the work accomplished by the Illinois State Board of Health during the past five years, say from Jan. 1, 1905, to Jan. 1, 1910, as compared with that accomplished during the period from Jan. 1, 1885, to Jan. 1, 1890, this comparison to bear upon the work in the direction of the administration of the medical practice act and the enforcement of the sanitary and health laws of Illinois.

Before concluding this communication, which of necessity has already assumed an undue length, I find it necessary to discuss the statistics presented by you to show that "Illinois has fallen behind" in matters of "medical education and medical examination."

In your attempt to show that Illinois is no longer "in the front rank in medical education" you set forth the fact that in 1906 the states of Indiana, Kentucky, Missouri, Iowa and Wisconsin, bordering on Illinois and having, according to you, "identical conditions of population"—just whatever you mean by that—"collectively only examined 21 per cent. more of applicants than Illinois, while they have a combined population of 150 per cent. greater." But what of this, and what does this prove except that Chicago is the medical center of the West?

Continuing in your endeavor to discredit the standing of your own state, you point out that, while Illinois in the examinations of 1906 had a percentage of failures of 8.4, the states bordering on Illinois, namely, Indiana, Kentucky, Missouri, Iowa and Wisconsin, had a percentage three times greater, namely, 25.

While it is often possible apparently to prove the direct opposites with the same statistics, the figures presented by you prove only one of two things, namely, that you are incapable of correctly interpreting statistics, or that you are possessed by a desire—I had better say a mania—to besmirch your own state as much as possible.

Your statistics are fallacious and your comparisons are unfair. Furthermore, Illinois cannot be compared with the states you mention, in 1906, for the good and sufficient reason that in but three of the five states were the requirements for medical licensure even fairly comparable with those of Illinois.

Missouri in 1906 examined non-graduates in medicine, 45 per cent. of whom she rejected. Kentucky in 1906 registered, as she was obliged to register, graduates of her own colleges without examination.

Had you been actuated by a desire to make fair comparisons you would have placed Illinois in a column with other leading states, such as New York, Pennsylvania, Ohio and Michigan (which latter, incidentally, borders on Illinois), states in which, as in Illinois, only graduates of approved medical colleges are admitted to examination; states in which, as in Illinois, every person desiring to take up the practice of medicine must pass an examination; states in which, as in Illinois, a careful preliminary investigation is made into the credentials of the applicants, some of whom are, as a consequence, refused admission to the examination.

That the statistics presented by you are not only fallacious, but, moreover, worthless for comparative purposes, is proven by the percentage of failures in the states mentioned by you (Kentucky excepted, for no comparison can be made with Kentucky), as shown in the state examining board statistics for 1906, published in *The Journal* of the American Medical Association for May 25, 1907, as follows: Wisconsin, 3.7; Indiana, 5; Illinois, 8.4; Iowa, 14.9; Missouri, 43.7.

And in the comparison of the percentage of failures in Illinois with that in the other leading states named there will be discovered nothing that "wounds our pride" or causes us "to find that our state has fallen behind in these matters." Illinois, as stated, had, in the examinations of 1906, 8.4 percentage of failures. In the same examinations the percentage of failures in New York was 8.2; Pennsylvania, 12.3; Ohio, 6.7, and Michigan, 3.6.

Equally fallacious are your statistics in the matter of the failures of the graduates examined in their home states. Instead of the states adjoining Illinois having, as alleged by you, 200 per cent. more failures than Illinois, the statistics taken from *The Journal* of the American Medical Association show the failures of graduates of the states mentioned (Kentucky excepted, for examinations were not held in Kentucky) in their home states to be as follows: Illinois, 5.6; Indiana, 6.8; Iowa, 15.3; Missouri, 44.1, and Wisconsin, 4. Of interest in this connection will be the percentage of failures of home graduates in the leading states hereinbefore mentioned, viz.: New York, 3.3; Pennsylvania, 8.1; Ohio, 4.3, and Michigan, 0.7—this, be it noted, against a percentage of failures of 5.6 in Illinois.

As you say, "Any one interested can look up the figures upon which these (your) percentages are based," but, as you do not say, yet still well know, any one who attempts to look up the figures will be unable to find, either in *The Journal* of the American Medical Association or elsewhere, the fearfully and wonderfully constructed percentages so cleverly presented by you. But, as you well know, any one who attempts to look up the figures may find, without the least difficulty, in *The Journal* of the American Medical Association of May 25, 1907, the simple percentages so clearly presented by me.

Your statistics are fallacious—to repeat what I have already said—and here I am reminded of the remark, anent statistics, made by the late Charles Harrington, Secretary of the Massachusetts State Board of Health: "Statistics may be made to lie when they appear to tell the truth, and they have been raised to superlative rank, therefore, among falsifiers of all degrees. . . . In the hands of the unskilled or unscrupulous, statistics may be more productive of harm than absolute ignorance, for it is better not to know at all than to be misinformed."

In conclusion, I will again remind you that you have failed in a lamentable manner to name any one of the "several sources" through which, according to you, it had been brought to the attention of the members of the Southern Illinois Medical Association "that Illinois has become one of the 'rotten spots' of the United States in medical education and medical licensure." You have failed, and also in a lamentable manner, to "point out any responsible utterance or writing in which Illinois has been alluded to as 'one of the plague spots of this country in medical education, medical examination and medical licensure.'" In short, you have failed, and, be it said, in a most lamentable manner, to show the slightest justification for the resolution prepared by you and adopted at your instance by the Southern Illinois Medical Association in the closing hours of the session, when, as stated by Dr. Hamilton, who extended an "accommodation" to you, the "resolution carried, as all resolutions do carry on such occasions."

Awaiting your publication of this communication in the March, 1910, issue of THE ILLINOIS MEDICAL JOURNAL, and your reply—should you see fit to reply—and also your acceptance of my offer to discuss with you the enforcement of the medical practice and sanitary and health laws of Illinois during the periods mentioned by me,

Very truly yours,

JAMES A. EGAN,
Secretary Illinois State Board of Health.

MEDICAL EDUCATION IN ILLINOIS.

To the Editor:—I trust that it will be convenient for you to publish Dr. Egan's letter, addressed to the Chairman of the Council of the State Society, in the March JOURNAL. I feel sure that you and your readers will welcome an explanation which the officers or members of the Illinois State Board of Health can make regarding the inefficient and worthless medical colleges which they have allowed to exist and the low standards in medical education which they have continued in this state in the face of the successful efforts of the leading Chicago medical schools to establish and maintain standards equal to any in the country.

My interest in the cause of general and medical education, and my duty as an officer of the Illinois State Medical Society, which has among the principal objects of its organization "to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws," are the only reasons for continuing the discussion of this

important subject. This question, like many others, will never be settled right until the whole profession understands it. There are always at least two sides to every question, and it is necessary that every phase have the greatest publicity. The fact that the present State Board of Health has failed to keep the public service, which it controlled, abreast of the times, and that the secretary has not shown that degree of efficiency in administering educational and sanitary affairs which the protection of the public, in a great state like Illinois, demands, is not necessarily a reflection on them personally. There are hundreds of excellent physicians in Illinois, but high grade sanitarians are few; yet the people of Illinois are entitled to such service, and when they understand the facts they will demand that the affairs of our Board of Health be placed in the hands of a trained sanitarian. When the members of the medical profession become advised of the condition of medical education in Illinois, they will demand of the Board and its executive officer medical schools of proper standard, and licentiates of such education and training that the public will be protected and the character of the profession elevated. These are among the things which the Illinois State Medical Society has always stood for and will continue to demand until our state is again in the first rank.

It has now been four years since the facts given in my communication of February were made public by the Council on Medical Education of the American Medical Association. One would have thought that this showing would have been quite sufficient to urge upon our Board the necessity of active measures for the improvement or elimination of worthless medical schools. That the report did not have this effect on the Board is quite evident from the report of Dr. Arthur Dean Bevan to the Conference on Medical Education in Chicago on Feb. 28, 1910. Again, the Council emphasized in stronger language than before, the deplorable conditions existing in this great state. The report said substantially that of the thirteen medical schools existing in the City of Chicago, only three were found acceptable. I quote the following from this report:

"After a careful analysis of the medical colleges of Illinois, covering a period of five years, and two complete inspections of the schools, the following three classes of the medical colleges have been made:

"Class A. Medical schools which are acceptable: Northwestern University Medical School, Rush Medical College (University of Chicago), College of Physicians and Surgeons (Medical Department of University of Illinois).

"Class B includes medical colleges needing certain definite improvements to make them acceptable. The Council on Medical Education will be glad to furnish each one of these schools with a detailed report of existing conditions and needed improvements: The American Medical Missionary College, Chicago College of Medicine and Surgery (Valparaiso University, Ind.), Hahnemann Medical College of Medicine and Surgery of Chicago, Bennett Medical College.

"Class C. Medical colleges which are not acceptable. These colleges need complete reorganizing in order to make them acceptable: College

of Medicine and Surgery (physio-medico), Herring Medical College, Illinois Medical College, Jenner Medical College, The National Medical University, Reliance Medical College. The Illinois Medical College has recently been taken over by the Loyola University of Chicago. It would require a complete reorganizing by the Loyola University in order to place it in an acceptable condition. This report of colleges is the result of the efforts of the Council on Medical Education of the American Medical Association, a committee from the Carnegie Institution and a committee of the Medical Education of the Illinois Medical Society."

The authority to compel these schools to come up to standard is vested by the laws of this state in the Illinois State Board of Health, and the report might have said with justice; we should compel the State Board of Health to declare these deficient schools not in good standing after giving them sufficient notice of their deficiencies. It is the Board's plain duty under the law to protect the people from what Dr. Bevan's report declares to be the "ignorant, poorly trained and ill-qualified doctor," whom this Board has been allowing to enter the practice of medicine in such large numbers.

This latest report of the Council on Medical Education certainly amply justifies the Southern Illinois Medical Society in their resolution of Nov. 5, 1909.

Dr. Henry S. Pritchett, President of the Carnegie Foundation for Advancement of Teaching, made the assertion at this same conference that: "The United States supports too many physicians. While Europe maintains a proportion of one physician to every 1,500 people, the United States has one physician for every 568. This overproduction is due to our too numerous low-grade medical schools and laxity of laws governing them. It is time the country adopted means to relieve itself of this burden."

That the Illinois State Board of Health has had ample warning of the conditions in Illinois, is shown by the following quotation from a letter of March, 1908, to the chairman of the Council of the Illinois State Medical Society by Dr. J. V. Stevens, the Secretary of the Wisconsin Board of Medical Examiners. Dr. Stevens said: "I will say frankly that while Illinois was one of the first to undertake this important work (advancing the standard of Medical Education) as a state, that other states have often felt that more recently the affairs of your Board of Health have not been administered in the spirit of the present-day idea of our work as boards, who are charged with the duty of advancing standards and adopting improved methods in Medical Education. For instance, nearly every one of the states surrounding Illinois have been compelled to refuse any recognition to several colleges situated in Chicago that your Board continued to recognize as reputable until some of them were very recently declared unworthy of recognition by your Board when it was impossible for them to gain recognition anywhere else."

Dr. F. P. Norbury, chairman of the Committee on Medical Education of the Illinois State Medical Society, in a letter dated March 2, 1908, and addressed to the chairman of the Council of Illinois State Medical

Society, stated that after a careful personal investigation of most of the medical schools in Chicago: "There are really only four standard schools in Chicago, and two others that probably could qualify."

At that time Dr. Norbury indicated the several schools which should not be allowed to have recognition in the State of Illinois, and the recent report of the National Council shows that the opinion of his committee was amply justified.

Dr. J. N. McCormack, Secretary of the State Board of Health of Kentucky, and Medical Organizer for the American Medical Association, after a personal visit to almost every county in Illinois, made a report to the American Medical Association, from which I quote the following: "As the result of careful and protracted investigation, I became convinced that the medical laws have been practically broken down, and that the profession and people do not receive the protection from quackery to which they are entitled under the plain letter as well as the spirit of the laws, because the organized profession and the State Board of Health do not cooperate in securing and enforcing legislation. The work is sufficiently difficult anywhere with all of these agencies united, and it is foredoomed to failure where they are divided. The secretary of the State Board of Health wrote me that he is sure that he has back of him the support of the rank and file of the profession, but I found constant evidence that he is mistaken on this point, and this opinion was confirmed by those to whom he referred me for information."

Dr. B. D. Harison, Secretary of the State Board of Registration of Michigan, in a letter dated Feb. 24, 1910, to members of his Board and others involved in a controversy with the Secretary of the Illinois Board regarding reciprocity in certain cases, said: "I hope also that you will notice the attitude of Egan in this matter. Ten years ago a letter of the kind he complains of would have worried him very little, from the fact that his Board had the highest standing of any state in the West. At this time the standing of his Board is such that he is obliged to 'get down on his knees' to the members of the Michigan Board and entreat for mercy. During the ten years of the Michigan Board's existence it has received nothing but opposition from the Illinois Board and its Secretary, and every endeavor has been made to nullify every action taken by this Board in the interests of higher standards and a better system of administration, but without success."

In an official communication of Feb. 11, 1910, addressed to Dr. James A. Egan as Secretary of the Illinois State Board of Health, and signed by Dr. B. D. Harison, Secretary of the Michigan State Board of Registration in Medicine, is the following threat regarding the reciprocal relations of Michigan and Illinois: "I shall bring the matter before my own Board at its next meeting in June, and I doubt very much if the Board will continue to reciprocate with a State Board who employs a secretary . . ."

The above quotations from various authorities are among those which have come to our notice, and indicate that the Council of the Illinois State Medical Society is not the only one with whom the executive officer

of the Board of Health is in disagreement and controversy on account of the condition of medical education in Illinois.

An interesting side light and something of an index to the conditions of medical education in Illinois, is the experience of the Civil Service Commission in securing assistant physicians for our state institutions. This Commission has only been in existence about five years, and only has to supply vacancies in 17 institutions, and yet, of the licentiates of the Illinois State Board of Health appearing before it for examination, a large percentage has failed to pass, and the Board has been compelled to modify the character of its examinations in order to secure the necessary number of physicians. The ordinary tax-paying and law-abiding citizen would be interested to know on what basis of justice the state insists on more competent physicians to treat the defective and criminal classes than it demands for him.

In conclusion, I wish to say that as far as the present Council of the Illinois State Medical Society and the ILLINOIS MEDICAL JOURNAL are concerned, that, notwithstanding all that has gone in the past, if the Illinois State Board of Health "will take off their coats" and clear up the present conditions as they could easily do, I believe the profession of the state, the officers of the State Society and the ILLINOIS MEDICAL JOURNAL will gladly give the Board their most hearty and loyal support. I would personally be only too glad to cooperate in every way possible to assist in such good and desirable work. The Board must recognize the conditions and then set themselves to the task of compelling the worthless medical schools to reorganize or quit business, and of placing the affairs of the health department in the hands of a trained sanitarian, and in this way make Illinois, with its great Chicago, the foremost state in the land in the quality of its medical schools and its medical men and in the perfection of its sanitation. If the Board will lead, the profession will be only too glad to support them, but if they will not accept the facts as presented, after careful investigation by the American Medical Association, the Carnegie Foundation for the Advancement of Teaching, the Illinois State Medical Society, the local medical society, officers and members of neighboring boards and others, there is nothing left but to continue the campaign until the present Board or its successors will recognize conditions and correct them. Respectfully,

CARL E. BLACK,

Chairman of the Council of the Illinois State Medical Society.

Jacksonville, Ill., March 4, 1910.

THE FEE-SPLITTING GAME.

To the Editor:—The communication of Dr. ——— on "The Fee-Splitting Game" in the February issue of your journal deserves more than usual attention, because it opens up for discussion a side of the subject, "Division of the Fee," to which little attention has been paid, yet one which is daily assuming ugly proportions. The average doctor who

opposes the plan of a specialist giving a part of the fee to the family doctor for his time, trouble and help in a case does not realize what he is doing. The effects of opposition to open division of the fee (that is — known to patient) are, first, that incompetent operators are doing surgical work which they should never attempt to do, rather than sacrifice the fee to a surgeon who keeps all he can get hold of; and, second, that the general practicians are the ones who "divide the fee."

Your correspondent wonders how his competitors are making $6,000 to $10,000 a year while he plods along with $2,000 or $3,000. The explanation is easy: If Dr. A has a fibroid tumor under his care he says to the patient, "I can't operate on that, but I have a friend who can. The operation and after-treatment will cost you $300.00." This being agreed upon the doctor writes to his friend in the city: "Dear Dr. B, I have a patient in very moderate circumstances" [note the "very moderate circumstances," a phrase so common in the letters to the city surgeon that he skips that paragraph in all the letters about prospective patients] "who desires removal of a tumor of the uterus. Please set some day next week when you can come down and help me. There will be only $100.00 in it for you, but I know that, for an old friend's sake," etc., etc.

A dozen such cases in a year increases the country doctor's income $2,400. Talk about "division of the fee"—the family doctor of to-day who is "on to the game" has the city surgeon "frayed to a frazzle."

It strikes me that in its demoralizing effect upon the doctor this plan of procedure is just as bad as, if not worse than, the acceptance of a secret "commission" for cases "delivered" to the specialist. Certainly from every standpoint it is far more disreputable than the practice of specialist and doctor rendering a bill which the patient knows covers the services of both and then dividing according to value of services, degree of responsibility and amount of work of each.

There are other ways of increasing incomes, such as spraying the nose every day or two for hypertrophied turbinatids which ought to be removed, giving "local treatment" for erosions of the cervix, which should be cured by trachelorrhaphy, using *x*-rays for purely imaginary ailments, etc., etc.—all these, and other, forms of getting money are so common that every doctor ought to be "wise" by this time. Chief among the sources of revenue of the successful ones is the practice of carrying patients with tumors, ulcers, gall-stones and, alas! even operable cancers, for months and months under local and internal treatment instead of advising early radical cure. At least that is the observation of

SURGEON.

FAVORS CHANGE IN DATE OF MEETING.

CHICAGO, Feb. 21, 1910.

To the Editor:—If I remember aright, you favored and voted for a change of date of the meeting of the State Society from May to September or October. We lost by only a few votes. The change has so many advantages and so few disadvantages that it ought to be brought about.

Would not this year be a good time to bring it up again, since the St. Louis meeting is so likely to cut into our attendance?

I have mentioned the matter here and several very much favor the change. They seem to think the opposition is wholly from the country doctors. I believe a little effort would bring success.

Sincerely yours, H. A. Pattison, M.D.

A CLASSIFIED INDEX TO MEDICAL LITERATURE.

To the Editor:—Readers of The Illinois Medical Journal may be interested in and some of them might like to take advantage of the plan of the library of the Morgan County Medical Society for furnishing a classified index to current medical literature.

This plan differs from the exhaustive alphabetic index to medical literature published semiannually by *The Journal* of the A. M. A. that the card form is of great advantage in its expansive and cumulative features, which, with its classification of subjects, makes it much more accessible for immediate reference. For several years this library has taken thirty of the leading medical journals published in the English language, including all the great weeklies, and has carefully indexed the original articles and clinical notes according to the Dewey system. At first this was done for the benefit of the members of the Morgan County Medical Society, but others became interested and copies of the index have been made and sold to several neighboring societies. In order to do this work, it has been necessary for the library to employ a trained librarian, with headquarters in the library (in the Carnegie Library Building), and ready at all times to assist members and others in using the library, and especially to prepae for members reference lists on any subject desired.

The additional copies of this card index, amounting to nearly 10,000 cards annually, have been furnished at a cost of $125 a year, simply enough to cover the expense. Recently the library has had inquiries from a number of other societies and libraries who would like to have the index, but the expense is too great. In canvassing this matter with a printing house it appears that if we could secure fifty or sixty subscribers to the index we could furnish it (not including the guide cards, which cost 2 cents each) for about one-half the cost, that is, for $60 a year, or $5 a month. If any of your readers would like to have such an index to recent current medical literature, we would be very glad to have their names, and if fifty subscribers can be secured we will undertake the furnishing of this index at $60 a year. It will probably comprise about 10,000 cards, arranged with class numbers and by authors, so that any subject can be found in its proper class and alphabetically under the name of its author. We find practically that very few things in medical progress fail to get into these journals in the course of the year, and while there are some which would come to hand more promptly from foreign journals direct, even these are soon accessible to the reader through the medium of this group of leading medical journals.

As this is a work carried on by the library entirely in the interest of the practitioner for the purpose of enabling him always to be abreast of the times, we take the liberty of making an appeal through the columns of THE JOURNAL. This plan is based on the fact that ready access to the best medical journal literature is the surest and simplest way for the practitioner to follow medical progress. We would greatly appreciate correspondence with those interested in a good, fresh, up-to-date card index. LIBRARY OF THE MORGAN COUNTY MEDICAL SOCIETY.

Jacksonville, Ill.

Special Article.

SOME ABSURD AND UNFAIR FEATURES OF MEDICAL POLITICS.

G. FRANK LYDSTON, M.D.
Professor of Genito-Urinary Surgery, Illinois State University, Medical Department.
CHICAGO.

Medical men are proverbially indifferent to their own interests, yet it is surprising that they should tolerate some of the things that creep into the politics of our medical societies. Evils which would not for a moment be tolerated by the average intelligent citizen—and he is obtuse and patient enough, the Lord knows—thrive and wax fat in medical politics.

Equality of political power of the voting unit is the theoretic basis of self-government of any social organization. Nothing is so ignored as this equality by medical men. The truth of this statement requires very little argument for its substantiation. The presentation of a few facts is alone necessary.

In addition to its "branch" societies, which are its organic constituent bodies, the Chicago Medical Society has in affiliation with it ten special societies, such as the Ophthalmologic, Orthopedic, Pathologic, Surgical, etc. Each of these societies requires that applicants for membership shall be members of the Chicago Medical Society, *but does not demand that members shall remain members of the Chicago Medical Society.*

Each special "affiliated" society has the privilege of representation by a councilor in the Chicago Medical Society, and here's where the situation is a bit queer. An ordinary member of the Chicago Medical Society is privileged to vote only for a councilor from his branch society and for councilor-at-large. *But the medical "joiner," who for political, scientific or business purposes becomes a member of the special affiliated societies, may vote for as many councilors as he has memberships in the affiliated bodies. It is not impossible that matters could be so arranged that a man could join the entire ten affiliated societies.* One gentleman—an officer in the A. M. A., by the way—is credited with five affiliated memberships. Thus this gentleman has seven votes in local politics. As he is a coun-

cilor and a state delegate, he has two more votes to his credit in those bodies. *This makes nine votes in A. M. A. politics, for the local membership vote is the voting unit in the A. M. A. all over the country.*

The ease with which a coterie of men might obtain control of our medical societies should be obvious enough, yet I suspect that some of the brethren will have to have a diagram of the political joke that is played upon them at election time. I suppose, moreover, that if the brother in the ranks of the general practitioner—especially of the country—who cannot afford, has no opportunity, or does not care for these octopean privileges, is satisfied with the political greediness of his more opulent city brother, it possibly is a crime to disturb his equanimity.

Some of the members of the affiliated societies are no longer members of the Chicago Medical Society, *yet they keep on voting, just the same.* Many of the members of the Chicago Medical Society are not members of the A. M. A., yet *they, too, vote just the same.* In short, there are three classes of voters in the A. M. A. politics, viz.:

1. Members in full and regular standing.

2. Members of the local and state societies who are not members of the A. M. A.

3. Members of affiliated bodies who belong neither to the local, state or national organizations.

Under the foregoing conditions fair and, I suspect, legal elections in our medical bodies from the A. M. A. down are impossible. And there is but one remedy, viz.: the open membership ballot. The only alternative would be compulsory membership in the A. M. A. for local and state society members, and this would not for a moment be tolerated.

As for the fact of members of the official family of the A. M. A., such as the treasurer and trustees, and paid employees, such as the assistant secretary and associate editor, serving as local councilors and state and national delegates I have expatiated upon this evil so often that I will in this connection merely reiterate what I have elsewhere said, viz.: that autonomy of the state, local and national bodies is not possible under present conditions, and that a self-perpetuating government by the practically self-chosen few is inevitable.

Is it not time for a thorough house-cleaning? Above all, is it not time for the membership ballot, the initiative and referendum, nominations by petition, the abolition of affiliated societies, and exclusion of high officials of the A. M. A. from the governing bodies of our state and local societies?

COUNTY AND DISTRICT SOCIETIES.

CHAMPAIGN COUNTY.

The regular monthly meeting of the Champaign County Medical Society was held in the parlors of Hotel Beardsley, Champaign, February 10, at 2 p. m. A very interesting paper by Dr. W. G. Bain of Springfield on "The Medicinal Value of Minerals in Water" was enjoyed by all. Dr. Bain discussed his subject from the standpoint of analysis of the water in Champaign county, stating its chemical contents and the therapeutic effect received from drinking this water. This was a very practical and interesting paper.

Dr. Wm. V. Secker of Toledo was elected to membership in the society. An invitation from the faculty members of the University of Illinois, who are especially interested in medical work, to the society for a "Laboratory Demonstration" for the April meeting was read, and motion was made and carried to accept the invitation. Some routine business was then transacted and the meeting adjourned.

N. M. Baker, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Meeting, Nov. 24, 1909.

1. A REMARKABLE CASE OF ENTEROLITHIASIS.

Charles Spencer Williamson, M.D.

(Author's Abstract.)

The following specimen, for which I am indebted to Dr. Marion W. Uberroth of Tiffin, Ohio, presents the following most remarkable history: The patient, L. E., aged 65 years, German-American farmer. Family history negative. Personal history, nothing of importance until 35 years ago when he was attacked by severe pain in the right hypochondrium. This attack lasted for some time, and then subsided partly, leaving behind a soreness in this region which has persisted uninterruptedly ever since. Coupled with this was considerable lassitude and debility, which at times became so marked as to compel him to cease work for a few days. He has lost some weight, but not a large amount. At times would drink hard. At no time were any gastrointestinal symptoms prominent. He had no emesis, neither diarrhea nor constipation, and never jaundice.

After 35 years, in March of the present year, he developed typhoid at the same time with two of the remaining members of the family. The typhoid ran its ordinary course until convalescence was about to set in when he suddenly developed an uncontrollable diarrhea. After a few days of unsuccessful efforts to check the diarrhea, incontinence of feces set in with no apparent cause. At this time while endeavoring to pass a colon tube, an obstruction was met with five or six inches above the sphincter. Failing to pass the tube, the sphincter was dilated under an anesthetic and the hand introduced. A hard body the size of a duck egg could be plainly felt, but could not be dislodged. A cranioclast was then procured, and after severing the sphincter an attempt was made to crush the object. This proved unsuccessful because of its extreme hardness. With much difficulty the stone was finally grasped with the cranioclast and dragged out. In two days, with no farther treatment, the incontinence and diarrhea ceased, the lacerated parts healed rapidly, the patient making an uneventful recovery. Since then the patient has been fully relieved of all the pain and tenderness which had existed for so many years in the right hypochondrium, and when last seen was doing his fall plowing.

The Specimen.—A glance shows the specimen to be an enormous enterolith of a dark brown color, egg-shaped, excessively hard, and very heavy. In its largest circumference it measures eight inches, by six and three-fourths inches in its smallest circumference, weighing six ounces, seven drachms. On sawing it through, in the process of which four jeweler's saws were broken, because of the extreme hardness, the following remarkable condition was disclosed. The nucleus was formed by a plum stone in a perfect state of preservation, around which lime salts had been deposited in three distinct strata. Immediately around the stone, a layer of material resembling ordinary limestone, then a thicker layer, coarser in character, and apparently of different constitution, and a third layer outside of all of brownish color and of almost flinty hardness and density. This finding made plain an incident which occurred at the time of the delivery of the stone, when a plum stone came away with it. Undoubtedly the plum stone had been lodged with the enterolith in a sacculus of the colon, and had been liberated from its bed by the dislodgment of the enterolith.

The unusual features of the case are: 1. The fact that it had made symptoms for 35 years, from which we may infer that its formation goes back many years further. 2. The fact that at no time was any stenosis produced by it. 3. The remarkable sequence of diarrhea and incontinence, which it is fair to assume were produced by the migration of the stone from the hepatic flexure to the rectum and its impaction there, since all the symptoms ceased almost immediately after the delivery of the stone.

In conclusion permit me to say that I think the thanks of the society, as well as those of myself personally, are due to Dr. Uberroth for his courtesy in permitting me to demonstrate this specimen.

2. A CASE FOR DIAGNOSIS.

E. M., aged 49 years, German, grocer. At the age of 12 fell into a cistern, following which he had pneumonia. Some time after, probably a year or two, developed weakness in the left leg, which has slowly but steadily increased up to the present time. Up to seven years ago he could work pretty well, but at this time the weakness became so bad as to compel him to stop work. About five years ago the left arm began to get weaker up to the point of almost complete paralysis. This cleared up almost entirely in the course of a year or two. For the last five years he has suffered from headache, memory has been failing rapidly during the same time. His speech he describes as becoming progressively more difficult, and is best characterized as a slow, hesitating, slightly staccato speech. He can pronounce perfectly all the letters. The family history, absolutely negative in every way. Pathologic history: The patient has been remarkably well in every other way. Syphilis is denied and no evidences of it can be obtained. Has seven children, all of whom are either living and well or succumbed to infections of childhood.

Objective Examination.—The patient well-nourished, perfectly orientated, bony and muscular systems well developed, no atrophies, no contractures. Sensation: absolutely negative. Reflexes: abdominal and cremasteric absent. The plantar is exaggerated on the left side. Babinsky present. Knee-jerks exaggerated, especially on the left side. Ankle reflex present on the left, absent on the right. Bladder and rectum negative. Electrical excitability normal. Eye grounds perfectly negative. Field of vision normal (Prof. Loring). Pupils equal, mid-wide, react to both light and accommodation. A just perceptible paresis of the internal rectus. No nystagmus, but on extreme lateral position slight nystagmus-like movements. All the other cranial nerves normal. No tremors or abnormal movements of the extremities. I presented this case to the society about five years ago, at which time I made the diagnosis which I shall state later, in order to leave the case open for an unbiased discussion.

DISCUSSION ON THE CASE PRESENTED BY DR. WILLIAMSON.

Dr. L. Harrison Mettler:—Dr. Williamson has just asked me to say something in regard to the first case he presented: and so long as all of those who have seen it before have made different diagnoses, I do not hesitate to give my opinion. If

the case were typical, one would have no difficulty in diagnosing it. But it is just the atypical cases that give us trouble. The disease seems to be unilateral. If it were bilateral no neurologist would hesitate to pronounce the case one of multiple sclerosis, even though many of the symptoms are not well marked, such as nystagmus, intention tremor, etc. Its history is that of a slowly progressive disease of the nature of an ascending hemiplegia, associated with defective mentality. There has been a temporary strabismus. Speech is slightly defective. There is no disturbance, however, in sensation; no intention tremor; no nystagmus.

Mills has been investigating lately a particular class of cases which he calls progressive hemiplegia—progressive, ascending, sometimes descending, running through long periods, and keeping the same general picture with slight breaks here and there. Not many of them have come to autopsy, but, if my memory serves me, a goodly number were shown to be atypical cases of multiple sclerosis. In the absence of a more typical picture in this particular case, whereby the symptoms might indicate a definite pathologic change, we are justified in making at least a tentative diagnosis of multiple sclerosis. Many pathologists are beginning to think that multiple sclerosis, after all, is but a late syphilitic manifestation. Realizing that we cannot be dogmatic about an atypical case like this, still the clinical picture fits, it seems to me, more closely, but not accurately, the diagnosis of multiple sclerosis than anything of a neurologic character.

Dr. Frederick Leusman:—I would like to ask Dr. Williamson whether a Wassermann test has been made in this case?

Dr. Williamson (closing the discussion):—It has not, but it will be shortly. I have not seen him for perhaps two years, and while this test will be made, there is absolutely no evidence of lues. When I exhibited this patient before this society some five years ago my diagnosis then was multiple sclerosis. At that time this diagnosis was vigorously combated. A well known neurologist made a diagnosis of dementia paralytica and predicted that the man would not be here for another year. The patient's condition has not changed materially since that time. It has been suggested that the case may be one of Parkinson's disease, but it does not agree with that. One thing which can be urged against the diagnosis of multiple sclerosis is the age of the patient, but when the disease dates back a great many years it brings the case into the early twenties or thereabouts. The trivial paresis of the eye is not sufficient to enable us to draw any conclusion; but when we consider that this man has defective memory, a slight disturbance of speech, and a combination of cerebral and spinal symptoms, it makes the diagnosis of multiple sclerosis almost certain. The whole course of the disease makes lues, to my mind, excessively improbable. Lues does not act in that way under ordinary circumstances, and I think we can exclude it in this case. The diagnosis of multiple sclerosis has been amply justified by the long continued course of the disease, and the gradual addition of spinal and cerebral symptoms.

1. SMALL CARCINOMA OF THE UTERUS, WITH REMARKS AS TO THE MICROSCOPIC DIAGNOSIS FROM CURETTED PARTICLES. 2. RARE CASES OF GOITER.

Dr. Emil Ries:—I wish to bring this case of carcinoma of the uterus before you, not on account of any operative difficulties involved in the case, but on account of one feature which is important for the general practitioner, and as this is a general practitioners' meeting, I want to dwell on that more than any of the specialistic features of the case. The case is as follows: A woman, aged over fifty years, who had hemorrhages, consulted a very good and reliable gynecologist in this city, who, in order to make a diagnosis, proposed curettement of the uterus. The woman consented, she was taken to a hospital and curetted without an anesthetic. In this curettement four small particles were removed, two of which were handed to the pathologist of the hospital, the other two being given to the family physician, through whom they passed to me. The pathologist of the hospital who examined his two pieces made a diagnosis of endometritis. There was nothing malignant. Of the two particles which I had for examination, one showed a normal endometrium, and the other showed a distinct adenocarcinoma.

The family was informed accordingly. I operated and removed the uterus. I found a large uterus which contained an adenomyoma and apparently no carcinoma. Before the operation I went to the pathologist of the hospital, who was a friend of mine, and asked permission to look at his sections and he showed me his sections, one of which showed an ordinary endometrium with slight endometritis, while the other section showed ordinary endometrium all the way through with the exception of a very small corner which showed a distinct adenocarcinoma. When the uterus was out, no carcinoma could be seen. It was evident there was a tumor in the uterine wall, but that tumor was nothing but adenomyoma. There have been four or five reliable cases reported in the literature that had been examined by reliable men, in which curettement had revealed carcinoma from the small particles examined and where subsequent hysterectomy revealed no carcinoma in the uterus. In order to make sure I cut the uterus into small square pieces with a view to finding carcinoma if there was one, and at last I found it. There was no trace of carcinoma in the whole body of the uterus, but just above the internal os there was a carcinoma not larger than a pea. I have some sections here which you can see.

I bring this before you because there is one important thing about this case, and that is, if you do a curettement for diagnostic purposes it is doing an injustice to your pathologist if you give him only a part of the particles you have removed. You should either give him everything you remove or not ask him to make a diagnosis. If there is a carcinoma in the uterus an inch square and you give the pathologist all kinds of material curetted from other parts of the organ, he cannot make a diagnosis of carcinoma. He can only make a diagnosis of carcinoma, if he received all of the particles for examination. Do not split up the material which is removed, but give it all to one man and then he will be able to make a diagnosis of carcinoma if that disease is present.

THREE CASES OF GOITER.

The three cases of goiter which I wish to report have peculiarities somewhat out of the ordinary. In the first case, the goiter is not very large, but the woman had distinct disturbance in breathing. She had choking spells, and on careful examination it was found that this goiter started in the isthmus of the gland and extended down behind the sternum, developed between the trachea and sternum and caused compression of the trachea. This explains the symptoms the woman had, which were without relation to the size of the tumor. It was not the size of the tumor which disturbed her so much as its location. The operation in such a case has to be done more carefully than in ordinary cases, on account of the goiter extending farther down into the chest than usual. The veins extending from the lower pole of the thyroid may give rise to some difficulty in the operation, but did not do so in this case. The woman made a good recovery. The specimen from the second case does not show much, but is interesting on account of the history. This woman was operated on six years before I operated on her, by a good and reliable surgeon who removed the left goiter. After this the woman was in good health for six years until a few weeks before I saw here. Then she began to have difficulty in breathing. Very soon this difficulty became so great that she could not lie down any more, and on the day when she was brought to the hospital she was asphyxiated. She was brought to the hospital breathing only at intervals. She was blue in the face, with the pulse almost gone and she looked as if she was going to die in a short time. Her goiter was not very large. One could make out on the right side a slight enlargement, but it was certainly not the size of the goiter that caused the asphyxiation. As I have said, it was impossible for the patient to lie down and I operated on her while she was sitting up. She received one injection of scopolamin and morphin, and with this the operation was performed. I found that the capsule on the left side, which had been operated on six years before, was stretched across the trachea as a distinct band and held down the trachea firmly. On the left side where the goiter had been removed six years before the rings of the trachea were collapsible and very thin and on slight pressure could be pressed in completely, so that breathing was stopped absolutely. As soon as I cut the capsule from the goiter on the right side and lifted

the right side away from the trachea, the patient began to breathe freely, she could then lie down and soon regained her natural color. She made a good recovery and is living to-day.

The third and last case is a rare one of goiter fistula. These cases are so rare that Kocher, whose experience in goiters has been such that he has operated on over three thousand cases, has had only about a dozen such cases as this in his own work. This is the only case of its kind I have been able to find in the American literature so far. The goiter was removed from a male patient forty-five years of age, who was taken sick three months before I saw him, apparently with typhoid fever. He had no apparent goiter at the time. Some time after the typhoid fever, swelling of the neck, redness of the skin and edema were discovered and his physician made an incision over the left clavicle. A large quantity of foul-smelling pus escaped and the patient recovered with the formation of a sinus which would not close. This sinus continued to discharge a foul-smelling pus; at times the material was blackish. Before the abscess had formed the patient had never had any disturbance in swallowing or disturbance of the voice, but when he came to me he was hoarse and examination with the laryngoscope showed paresis of the left vocal cord. The operation was somewhat difficult on account of extensive inflammatory adhesions and the depth to which the gland extended. The operation was rendered difficult by the fact that the goiter developed between the spine and the esophagus and the trachea and was adherent to the spine, from which it had to be dissected off. The hemorrhage from the jugular vein which was injured was not of any consequence. Lateral suture of the jugular vein was resorted to. The removal of the goiter was not attended with any further difficulty. The patient made a good recovery. However, on the third day when the dressing was removed it was found that there was a milky discharge from the wound. Of course, having operated the way we did we suspected that the fluid came from the thoracic duct and soon determined this milky fluid to be the normal contents of this duct. These fistulæ of the thoracic duct always close and we did not do anything in particular, except compress the opening a little, and on the tenth day thereafter the thoracic duct did not secrete any more. The patient made a good recovery and his voice is better than it was before the operation. I have the goiter here. The white material which you see is not connective tissue only. It is degenerated goiter tissue, as I have found by microscopic examination, which shows in the midst of all fibrous material, compressed and degenerated lobules of the thyroid. In the center there is an abscess which contains calcareous material. Particles of this calcareous material are deposited in the wall of the abscess, then taken up by giant cells freely. Otherwise, we find nothing but the normal findings of abscess of goiter with the exception of this yellowish nodule which is normal thyroid surrounded by all this inflammatory condition. The interesting point is that some months after the operation had been performed, the question came up whether the man had had typhoid fever, which gave him this abscess, or whether he had a primary strumitis which caused sepsis and gave rise to apparent symptoms of typhoid fever when it was not really typhoid. Some months afterward we decided we would make a Widal test. That test was made by Dr. M. Herzog three months after the operation, which makes it six months after his typhoid fever, and it was absolutely and distinctly positive, proving thereby that the man really had had typhoid fever and typhoid strumitis, with the subsequent formation of a fistula.

Regular Meeting, Dec. 1, 1909.

A regular meeting of the Chicago Medical Society was held Dec. 1, 1909, with the president, John A. Robison, in the chair. Papers were read as follows: "The Medical Aspect of Those Toxemias of Pregnancy Which Lead Toward Eclampsia," by Edward F. Wells. "Thyroidectomy" (illustrated with lantern slides), by A. J. Ochsner, "Treatment of Exophthalmic Goiter with Serum of Thyroidectomized Animals," by S. Krumholz. Discussion opened by Sidney Kuh. "The Pathology of

the Thyroid and Hematology in 100 Goitrous Chicago Dogs," by Axel Werelius. Demonstration, "Anatomical Preparations Showing the Various Steps in Brain Surgery and Brain Localization," by W. J. Marvel.

DISCUSSION ON THE PAPER OF DR. WELLS.

Dr. Charles S. Bacon:—I think it is a matter for congratulation that an internist, a man who is so well known and has given so much attention to kidney disease, has become such an up-to-date obstetrician that he can read a paper which presents the new theories of this disease pretty well in accordance with the most advanced views. I think it is especially valuable that he has taken up the subject in the way that he has presented it on the program, namely, "The Medical Aspect of Those Toxemias of Pregnancy, Which Lead Toward Eclampsia." Of course, that is a rather long name, and if one were to improve the nomenclature a little it would be perhaps desirable. I have been in the habit of calling the disease eclamptogenic toxemia of pregnancy, which is a shorter name, and is as short probably as we can make it. But the important thing is to insist upon the fact that we have here a disease that has as one of its manifestations convulsions, instead of considering, as has been done so often in the past, and is still done, the convulsions themselves as some kind of mysterious disease. It is, I believe, just as important to study this disease of pregnancy, which has its manifestations in convulsions as it is to study the gastroenteritis of children, which manifests itself in convulsions occasionally, or tuberculosis of the lungs, which has as one of its manifestations hemorrhage from the lungs. In eclampsia the convulsions are simply manifestations of the disease, and that has been brought out well by the heading.

As to some of the statements made in the general proposition there might be some discussion, but it seems to me better in a discussion like this to pay attention to the symptoms that characterize this disease, and see how we can map out the disease, and so be able to discuss the question of its frequency, its diagnosis and prognosis.

As to the symptoms, we have kidney trouble shown in the urinary findings; we have the edema; we have the circulatory changes including edema. I have long believed that edema is a very important symptom. The more I see of the disease the more I believe edema is a very important symptom of eclampsia, and it is very essential to call attention to the occult edema. That, in connection with the increase in the blood pressure, it seems to me, is perhaps the most important symptom, especially in the early stages. The other urinary findings, the changes in urea, the changes in the indican, I have not been able to make use of because they vary according to the diet so much, and according to other factors; but the albumin and the casts of course are very important, but occasionally we see very decided evidences of edema, and increase in the blood pressure before we can discover casts. So I believe it is very important to call attention to the edema, and to the increase in the blood pressure.

Dr. Charles E. Paddock:—I feel that anything I may say would be of little interest, as the essayist has covered the ground very thoroughly. From the etiological standpoint of eclampsia, we are about where we were twenty years ago, and the theories of that time still have their strong advocates. Looking at it, however, from the curative side, there has been rapid improvement in the treatment. Physicians generally consider this condition due to a faulty metabolism, resulting in a poisonous substance which is peculiar to pregnancy; and with such a belief, an early recognition of the symptoms, and proper treatment, the number of cases of eclampsia has been greatly reduced.

The essayist has mentioned the fact that the slighter manifestations of toxemia, as the simple vomiting of early pregnancy, may be the forerunner of eclampsia. Every case, however slight, of this vomiting in early pregnancy should be considered due to a toxic condition, which sooner or later might lead to the more grave condition of eclampsia.

Every pregnant woman must be looked upon as a pathological case and careful attention given to the hygienic treatment. In the practice of physicians who

see these cases early in pregnancy and carefully watch them during this time, the cases of eclampsia are very, very rare.

The liver is the organ first affected, and I must take issue with the essayist that the kidney is always diseased. Autopsies have proven that an occasional case of eclampsia does not suffer from a kidney lesion.

Dr. Fenton B. Turck:—There is one important point which was hinted at by the author of the paper, and that is the question of diet in these cases. I have in the last fifteen years seen a great many cases of vomiting of pregnancy, and many cases followed by eclampsia, and one of the important things I have noticed is the effect of soups and beef-extract given to these patients, often precipitating attacks. In a discussion on that subject this summer I noticed that in Vienna they absolutely prohibit the use during pregnancy of anything in the nature of soups, extracts, or food of that character. It would seem from that on the surface, at least, that there was something in the extract that increased the toxemia and the absorption of some of the meat bases may be causative factors in precipitating these attacks. Recent observation has shown that the extracts themselves are not so toxic as would seem. They can be injected into the blood, and they themselves do not represent a toxic substance. Some recent work on bacteriology by Trautner of Copenhagen shows the flora of the intestines are productive of a reducing agent which is absorbed, increasing the uric acid and other bodies, which increase the toxemia, producing vomiting and convulsions. It is known that the extractives do alter the flora in the gastrointestinal tract, and where there is deficient elimination and the anaphylaxis produced by the growing fetus the addition of well known pabulum for this group of intestinal micro-organisms will increase the toxic state, and it is recognized by the best clinicians, both empirically as well as scientifically that the use of these substances may add to the increased putrefaction, and the activity of the micro-organisms in the intestinal tract, thus producing these symptoms, so that the question of elimination here becomes a very important one by inhibiting or preventing the early development of the flora in the intestinal tract, by appropriate diet, and thus abort, if not prevent, an impending eclampsia. The principle involved is to provide no food residue for the bacteria in the lower intestines—especially the pabulum like meat extracts.

Dr. Wells (closing the discussion):—Just a word in recapitulation: Let us brush aside all the secondary matters, so far as we are able to do so. In the first place, in the case of many women, they are never so well as when they are pregnant. In the second place, other women will tell us they are never so bad as when they are pregnant, and between that there lies a wide range of pathology. The advanced obstetrician, the obstetric investigator in the future may find that the spermatozoon is the conveyer of a something which in the union with the opposite in the nucleolus of the ovum there may be incomplete union. I do not know anything about that any more than others do, but there may be. We see that, for instance, in the transfusion of blood. They are not homogeneous. It may be the start. However, the start is, just as soon as the ovum attaches itself to the internal wall of the uterus, and circulatory connection is established, then nausea and vomiting begin with a good many women. If this is very severe, and the patient should die, either as the result of that, or accidentally, there is then this marked fact, namely, a central necrosis of the liver lobules, and preceding that an increased amount of ammonia in the urine and in the vomited matter. Passing on farther toward the end of pregnancy we find usually preceding no marked evidence of kidney involvement, or rather along with the kidney involvement there results a nervous condition with beginning edema and other evidences of impending eclampsia, and if a patient should die at this time there will be found lesions of the liver and lesions of the kidney of the kind I have described. The lesions in the liver are in this manner different from those in the early months of pregnancy. There is likely to be, or there is usually, some hemorrhages in the portal zones. If eclampsia actually occurs, and the patient dies there are large bulky hemorrhages in various parts of the liver, and in other organs of the body, and particularly in the brain. Ventricle hemorrhages are the

rule. It strikes me we have first a specific cause for the whole trouble, and this specific cause produces a certain damage to some organs we know of, and particularly the kidney and liver. Now, we may have a double complex condition toward the end, that is, we not only have the toxemia of pregnancy derived from the fetus and its adnexa, but we have the toxemia which is derived from the mother's waste tissues, not finding a ready exit.

In the case I mentioned a very remarkable thing occurred. Throughout pregnancy, or up to near the time of which I spoke, the urine, so far as one could see, was perfectly normal. The conditions of it were the same. Suddenly the blood pressure spurted up, evidences of acute nephritis developed, and this condition came on. With the draining away of the intestinal serum in the large quantity I mentioned, the kidneys immediately carried off large amounts of salt, especially chlorids and sulphates, which is very unusual. With bulk measure the chlorids rose to 62 per cent., an enormous quantity being carried off. During the preceding period of pregnancy the output of chlorids appeared normal, as measured by the urine. This was short-circuited in this occult edema, of which I spoke.

DISCUSSION ON THE PAPER OF DR. OCHSNER.

Dr. Frederick A. Besley:—If we take into account that the surgical treatment of exophthalmic goiter is a comparatively new field, we will have to admit that the subject is of great interest to all of us, and most of us have much to learn. We are to be congratulated that we have had the opportunity of listening to such a comprehensive and complete discussion of the technic for the removal of the thyroid. Dr. Ochsner has not at this time discussed the surgical principles underlying the condition.

I think that the selection of cases as mentioned by him is a very important factor; perhaps not so much the selection of cases as to which should be operated upon, but the selection of the procedure. Kocher, in operating, operates on an average of three times on two patients, which means that he does the least radical operation primarily as a preliminary step to the removal of the gland, very frequently. The operation for tying the superior and inferior thyroid vessels can be done under gas anesthesia, or under local anesthesia, and frequently when the vessel comes up over the surface of the gland it may be done through a small incision. It seems to me this method of procedure will be used much more frequently in the future than it has been in the past, if we would obtain the best end results and the lowest mortality. It is a well recognized fact that a patient who undergoes a radical operation during an acute exacerbation for the removal of a part of the gland frequently succumbs.

A word as to the method of anesthesia. Dr. Ochsner has devised a very ingenious method, it seems to me. It is our practice, however, to use rectal anesthesia almost exclusively in these cases. We have given ether per rectum between forty and fifty times, not alone in cases of goiter, but in doing other operations, and we have no regrets. We have yet to have the first case of rectal irritation. The method has many advantages. First, it has the advantage of taking the anesthetist away from the field of operation, the reasons for which are very obvious. Second, it has the advantage of doing away with the mucous secretion, and it seems also that this method is practically without danger. It is less dangerous than the method by inhalation. The ether is exhaled by way of the lungs, and they in this way act as a sort of safety valve in maintaining the equilibrium of the gas in the blood.

The question of the kind of operation to be adopted always presents itself. As Dr. Ochsner has said, the operation may be done by removing a part of the gland, one lobe and the isthmus, or a portion of both lobes. This depends upon the operator and upon the method of his choice.

As to the selection of cases for operation I agree with him that many of these cases are amenable to medical treatment, and that medical treatment should be employed; but a word of warning should be sounded. We should not allow our medical friends to treat these patients until there are myocardial and other structural changes that we cannot overcome, even though we do remove the gland and decrease the hyperthyroidism.

DISCUSSION ON THE PAPER OF DR. KRUMHOLZ.

Dr. Sydney Kuh:—My experience with the use of serum of thyroidectomized animals in cases of exophthalmic goiter covers a series of approximately fifty cases. First, let me say that in no one of these cases have I seen any harmful results whatever. I have used thyroidectin, the desiccated serum and the liquid serum as prepared by Parke, Davis & Co., or the liquid serum as prepared by Merck. The results obtained by thyroidectin have been published in a paper I read before this society, and in the paper to which we have just now listened. My experience with the desiccated serum has been rather small, and that too has been embodied in Dr. Krumholz's report. The liquid serums, as I tentatively stated in my previous paper, seem to be more active than thyroidectin. So far as the liquid serums are concerned, there is no difference in the effectiveness of Merck and the Parke-Davis preparation.

Dr. Krumholz has spoken of recurrences. Theoretically one would expect recurrences, and I was rather surprised to see one patient who has not taken any serum for a period of nearly six years, a case in which two prominent physicians in this town gave a bad prognosis, go on for six or seven years without any recurrence. The patient lives out of town. I saw her last week, and she is in a splendid condition. She weighs sixty-five pounds more now than she did during her illness, so we may say that there are cases in which recurrences do not occur at least within a short time. Recurrence, however, may still take place in this patient.

Summarizing my results I should say that in approximately 90 per cent. of the cases treated there has been more or less improvement. In the one case mentioned I should consider it practically a cure. There have been 90 per cent. of the cases in which the serum has done decided good; 10 per cent. have not been affected by it at all. Forty or fifty cases is not a sufficient number to draw definite conclusions, but the serum seems of distinct advantage.

Dr. Krumholz has stated—and I wish to emphasize the point—that the majority of cases did not change their mode of living, so that the improvement is not due to the fact that patients who were previously active have been placed in bed. The majority of them were up and about. In this connection I wish to emphasize the necessity of giving sufficiently large doses. Physicians have told me that they have used thyroid serum, and have had absolutely no results. When I made inquiries I usually found out that they gave the serum in doses of ten or fifteen minims three times a day. Such a dose is useless. You might as well give distilled water. It is necessary to give up to forty drops, and in one or two instances I have gone up to fifty drops of the serum three times daily.

In his statistics Dr. Krumholz mentioned cases of exophthalmic goiter associated with insanity, in which the serum was administered. I have seen three such cases. Two showed the beneficial influence of the serum, while one of them was not affected at all.

Regular Meeting, Dec. 8, 1909.

A regular meeting of the Chicago Medical Society was held Dec. 8, 1909, with the president, John A. Robison, in the chair. The subject for the evening was a symposium on "Organotherapy." Papers were read as follows: "Historical Review and Critique," by Alfred C. Croftan. "Adrenalin Therapy" (by invitation), by C. E. de M. Sajous of Philadelphia. "Orchitic (Spermin) and Ovarian Therapy," by Geo. Schmauch. "Thyroid and Thymus Therapy," by James B. Herrick. The papers were discussed by Drs. N. S. Davis, S. A. Matthews and C. S. N. Hallberg, and the discussion was closed by Dr. Sajous. A vote of thanks was extended to Dr. Sajous for his admirable paper. Adjourned.

DISCUSSION OF THE SYMPOSIUM ON ORGANOTHERAPY.

Dr. N. S. Davis:—I am sure I express the feeling of those who have listened to the series of papers this evening, as well as my own feelings, when I say the subject of organotherapy has been presented most fully and interestingly, and that we can draw definite conclusions from what we have heard. While listening

to the papers and thinking of the subject I have been led to contrast the knowledge which has been given us to-night, or which has been summarized for us to-night with what we possessed some fifteen years ago, when I presented a paper on the same subject to this society, summarizing what was then known.

At that time the subject of organotherapy was comparatively a new one. It was only five years prior to that that Brown Séquard drew the attention of medical men to it by his rather sensational paper, and to-day discredited views, in regard to the utility of the testicular extract. It was that paper and a series of papers elicited by it at about that time, which attracted attention to the general subject of organotherapy. That was in 1889. To be sure, some twenty years prior to that, when Brown Séquard was in his prime, he demonstrated the existence of internal secretion, but not in a way that attracted general attention, only the attention of physiologists, and a few physicians. He then demonstrated that the removal of the suprarenal glands produced certain definite effects, which must be ascribed, as he showed subsequently, to the removal of what he called an internal secretion, from the system.

Fifteen years ago there had been demonstrated the relationship which exists between the thyroid and cretinism and myxedema, and we knew then, as we know to-day, of the specific usefulness of thyroid in these diseases. We now know there is no substitute for thyroid in their treatment and that there is nothing so useful; nothing comparable to thyroid. The thyroid had been used also prior to fifteen years ago to a limited extent for the reduction of mild or simple goiters, and it had been demonstrated that it could reduce them in size if given in sufficient doses and persistently. Soon after, however, and to some extent even at that time, the profession was convinced that the persistent use of thyroid extract, such as was necessary to obtain results in these cases, often produced other effects which were dangerous, such as enfeeblement of the heart and general weakness. I have been convinced from my own observations and trials that as certain results can be obtained by the administration of iodin for the reduction of these mild or simple goiters, as by the thyroid, and it seems to me iodin is very much the more useful of the two, since it does not produce the dangerous effects which the thyroid extract does. The real utility of thyroid extract, however, in the simple goiters, led to its trial in exophthalmic goiter. But in this disease, almost without exception, it produced bad results, and it has been demonstrated repeatedly during the last fifteen years that thyroid extract is not useful in this class of cases (unless it be in a very small number of them such as Dr. Herrick has referred to to-night), but on the other hand, it produces distinctly deleterious effects, and is therefore contraindicated. Fifteen years ago thyroid extract was tried in obesity, but it was subsequently shown that while a certain amount of loss of flesh could be brought about by it, in order to produce these results the drug had to be given in sufficiently large doses to also cause weakness of the heart and a feeling of general malaise and weakness, which were disagreeable and dangerous to the patient. Therefore thyroid extract cannot be used with safety, or be depended on in obesity. Possibly it may be used as an adjuvant to other treatment, although my conviction is that it is rather more dangerous than useful in the treatment of this condition.

Although the fact that the suprarenal gland contained an internal secretion was demonstrated long ago, just what that internal secretion was was not discovered until comparatively a few years ago, and the insolation of the active principle of the suprarenal gland is one of the discoveries during the last fifteen years of greatest note in connection with this whole subject of organotherapy. Furthermore, although it was demonstrated so long ago that the removal of the suprarenals produced very definite disease, or very definite results, the therapeutic value of the internal secretion, or at least of the active principle of the suprarenals, was not demonstrated either until a comparatively few years ago. Unquestionably adrenalin is of distinct use as a hemostatic, by, as is universally admitted, contracting the blood-vessels, and possibly also by increasing the coagulability of the blood. It is also true that it is distinctly useful as an astringent, checking secretion when applied to an over-secreting mucous mem-

brane. It is unquestionably useful in certain asthmatic conditions, and possibly in osteomalacia, although the literature which has sprung up in the last two years on this subject is distinctly conflicting. In Addison's disease the literature again is conflicting as to its utility. My own experience, which of course has been limited, because one does not see Addison's disease very frequently, is opposed to its utility. Only a year ago I had an opportunity to watch one patient for a number of months, to whom adrenalin was given and the results of treatment of this case repeat the results in other cases. At first, it seemed that good effects were being obtained; certainly the patient improved to a marked extent for several months but finally relapsed and ultimately died under the treatment which at first seemed to do good. The patient happened to have come under my observation, when a remission in the disease occurred, and at that time any treatment would apparently do good. We cannot but be convinced by this illustration, and by numerous others which are on record that adrenalin is not in any sense a specific for Addison's disease.

Of the other glandular extracts I agree in the main with those who have spoken, that we cannot expect very much of therapeutic value from their employment.

Dr. S. A. Matthews:—Very interesting and at the same time almost past finding out is the rôle played by the ductless glands or the glands of internal secretion in the animal economy: What little knowledge we possess concerning the physiology of these structures has been gained by the study of the changes induced in animals by the removal of all or part of these glands and also the symptoms and changes arising from disease of the same. From these studies it cannot be doubted that these different glands either individually or conjointly form certain secretions which are necessary for the normal metabolic equilibrium of the body.

After the removal of the thyroid glands certain derangements of the body follow. These changes are thought to be modified or removed by the administration of an extract of the thyroid gland. From such observations has arisen our so-called organotherapy which is based upon the assumption that by the removal or by disease of certain glands this certain something which the glands secrete is removed from the body and by the administration of an extract of the same gland the secretion is restored and the animal ought necessarily to return to the normal state. If we consider these glandular extracts as drugs, then according to the older materia medica they would be classified as "restoratives." While the supposed internal secretions of the ductless glands have been sought after most faithfully, as yet only one has delivered up its treasure in anything like a satisfactory manner.

Oliver and Shäfer (1894) made the observation that an extract of the medulla of the adrenal glands administered intravenously was immediately followed by a very marked rise in blood-pressure. Abel, Takemine, Aldrich and others working on the chemistry of this extract have been able to isolate its active principle in an approximately pure state so that we now have the drug adrenalin chlorid which lends itself to pharmacologic study in like manner to strychnin, morphin or any other drug, so that its place in therapeutics has been to some extent defined. But the place in therapeutics set for it by pharmacologic study is not that of a restorative in the old meaning of the term. We cannot say that it acts beneficially in Addison's disease or even that it maintains life after extirpation of the adrenals. It does, however, temporarily offset the fall in blood-pressure following the removal of the glands.

Elliott has defined its principal pharmacologic action as that of a marked stimulation of the nerve-muscle connection in all organs which are supplied by true sympathetic fibers including the vagus to the heart. This action explains the marked rise in blood-pressure following intravenous injection of adrenalin as a stimulation of the vasoconstrictor nerves as they enter the plain muscle of the vascular system. These vasoconstrictor nerves are of true sympathetic origin. So characteristic is its action on these nerves that it has been used to demonstrate the presence or absence of vasoconstrictor nerve fibers to the brain, lungs and heart muscle. This action is only manifested when the drug is administered

intravenously or locally applied. Some clinicians claim that they obtain a rise in blood-pressure when administered hypodermically or per os. While not denying their results I can say, if adrenalin chlorid causes an increase in blood-pressure in man, administered other than intravenously, the reaction of the human family to adrenalin is different from that of any animal amenable for laboratory experiments.

Aside from the action of adrenalin on the blood-pressure it certainly exerts other influences as yet not well defined. These effects do not depend upon the mode of administration. Undoubtedly it exerts a beneficial action in certain cases of asthma which is not at all understood. Like other glandular extracts it may produce changes in metabolism which are indicated by such symptoms as glycosuria, loss of nitrogen, etc.

Dr. C. S. N. Hallberg:—I wish to call attention to a slight technical error in referring to these substances. Most every speaker has referred to the extract of the thyroid, and extract of the suprarenal. When they were first introduced they were called extracts, but as a matter of fact they are not extracts. They are the organs themselves, freed from fat, and produced in powder. They are official, one being five times the strength of the drug, and one is six times the strength of the drug. I speak of this because a great many physicians prescribe the extract of suprarenals or extract of thyroid. It is useless to the pharmacist, because he does not know what to dispense. They are not extracts, but simply the powdered urug. I have been advised that the Bureau of Chemistry in Washington has been engaged in investigating antifats in articles sent out by mail-order houses, and it is found they are nearly always composed of thyroid gland, and that there is a great deal of harm being produced by their promiscuous use, and it would be well for physicians to realize this, and to remember it, because sometimes people get ill from the effects of this, and consult a physician without telling him what they have been taking, and if you know this in advance you may know they are suffering from the effects of the thyroid.

Dr. Sajous (closing the discussion):—I have been much interested in the papers and the remarks that this meeting has brought out. Concerning the many functions I attribute to the adrenals, I can only say that they have been imposed upon me by a broad study of scientific evidence including personal experiments and clinical observations. It is obvious that the use of say five hundred facts obtained from the various branches of science are more likely to lead to truthful conclusions than a few data supplied by a single branch. If this point is conceded, it must be admitted that my position is far stronger when explaining any one function, than that of the physiologist who bases his teachings upon the narrow field that his own branch affords. It has become evident, and physiologists themselves concede, that physiology fails to explain many functions; these are precisely those we need as a foundation for the correct interpretation of diseases of the organs which carry on these functions. Physiology thus becomes, through its shortcomings—and notwithstanding the faithful and immense work its sponsors have accomplished—the underlying cause of the confusion which exists in every branch of practical medicine to-day, especially pathology, symptomatology and therapeutics. This is mainly because, in my opinion at least, they cannot carry out—unavoidably so, in view of the excessive labor involved—the admonition of one of their most brilliant men, Professor Pawlow of St. Petersburg, who said, after calling attention to the fact that physicians had pointed out the existence of secretory nerves decades before physiologists had reached definite results, that clinical observation would "always remain a rich mine of physiological facts."

As to the functions of the adrenals, and the use of adrenal preparations, the physiologist had given us but a small proportion of the data we, as practitioners, need to treat our cases intelligently. Indeed, much of the available knowledge on the functions of these organs is missed when the phenomena we observed in Addison's disease, hypernephroma, adrenal hemorrhage and other adrenal disorders are overlooked. The majority of these instructive phenomena are not witnessed in the laboratory; they belong to the field of clinical experience. They indicate in many ways—and a multitude of sound physiological and clinical facts sustain

this assertion—that the secretion of the adrenals, in common with other *bona fide* internal secretions, influences the organism at large, its oxidation, metabolism and nutrition, and even the functions through which the body protects itself against disease. In a word, in conjunction with the contributions of the physiological laboratory, clinical medicine offers a multitude of data that are capable of opening new paths, which in turn may ultimately give medicine the sound footing it certainly does not possess now.

Clinicians should be the last men in the world to speak of any effort in this direction without the greatest circumspection, and particularly without adducing facts. Science is a double-edged sword. It requires of him who advances new lines of thought to sustain his position with evidence; but it also demands of him who criticizes new ideas to back his statements with adequate testimony. I have adduced nothing but facts—and a very large number of them—in support of the all-important functions I have ascribed to the adrenals; and will always accept with gratitude, not mere expressions of skepticism which are meaningless nowadays, but all data, clinical or physiological, that will bring to light any error my work may contain. This is the only fair stand to take. Any other tends to compromise medical progress and, therefore, the welfare of our patients. (Applause.)

Regular Meeting, Dec. 15, 1909.

A regular meeting of the Chicago Medical Society was held Dec. 15, 1909, at 8:15 p. m. The president of the society, J. A. Robison, occupied the chair. Coleman G. Buford presented a paper entitled "Operative and Unoperative Treatment of Inguinal Hernia." E. S. Judd of Rochester, Minn., followed with a paper on "Indications for Herniotomy." Paul Gronnerud presented a "Demonstration of Operations on a Specially Prepared Cadaver."

Dr. William M. Harsha:—Mr. President, we certainly have to thank the gentlemen for very interesting papers.

Dr. Buford's paper interested me because I have seen quite a number of hernias in children, and have treated a good many. It seems to me that the treatment by truss in young children should be tried before operating. I am inclined to think that the average mother would worry more at the suggestion of an operation than at the trial of a truss, in the first year or two of the child's life. I quite agree that most of these hernias are in one sense of the word congenital, from the fact that they have preformed sacs. I think there is no question about that. I have seen hernia induced, I think, by paregoric that the nurse had given to the child causing constipation; have seen constipated children develop hernia; and have seen a good many cases cured by trusses. There is a truss made now with a rubber covering which can be kept clean that will cure hernia sometimes in children in a few months.

Probably the most important predisposing cause of hernia is heredity. I have seen three or four generations of people suffer with hernia of various kinds. The London Truss Society has figures to show that about one-third of the children go to the age of eleven uncured. Probably 20 per cent., or more, are cured by the truss. The others are no more difficult to operate by reason of having worn a truss. The great trouble about the truss treatment is that we are in the habit of sending our patients to the instrument maker, who fits the truss, and we have lost the patient. The patient goes back to the instrument maker the next time. These cases ought to be watched, just the same as any other orthopedic case, and if so cared for we can often cure the patient. I think Dr. Buford is perfectly correct in his recommendation to treat a larger number of these cases with the truss. He mentions it as a palliative means of treatment; but I think to a considerable extent it is curative, for the reasons that he stated.

The indications for operative treatment might be different with Dr. Judd than with the average surgeon throughout the country. His results are better than could be generally expected. It is true, I think, that the average physician or surgeon studying the statistics of cures, mortalities, etc., will quote the best ones. While Dr. Judd has had practically no mortality, Dr. Stiles of Scotland has shown a larger mortality in children than in adults. While we think there ought

to be practically no mortality in ordinary inguinal hernias, the fact remains that we have deaths sometimes. Once in a while a man punctures the iliac vein or artery. Once in a while we have an embolism. Of course that is not an argument against an operation generally. The fact is that the majority of persons between four and sixty, with no contraindication, ought to be operated, as the quickest and safest method of treatment. I think there are a good many cases that ought to be treated with the truss, and among them young children and the very old.

As to the methods of operation, there are two or three that are now generally adopted by surgeons. Bassini's, Ferguson's and Andrews' are all good. Whatever method one adopts he should do that operation until he can do it automatically. At present I do the Bassini operation. Sometimes I use Dr. Andrews' imbrication method on the outside. If we are perfectly familiar with one or several methods we know what modifications to make in order to adapt them to some special case. It is said that the reason Nature gets up such fine sunsets is because she has done it so many times. That is the only way to learn how to do an operation exceedingly well. The anesthetic is certainly responsible for a certain small percentage of deaths. That applies especially to old people, and it applies more especially to cases of toxemia from strangulated hernia. A great many operations have been done by Cushing, Bloodgood, Bodine and others with excellent results, by the use of local anesthetics. I believe that there are many hernias that should be treated by the infiltration anesthesia, especially in older people, where there is more likely to be postoperative pneumonia, and a larger rate of mortality.

Dr. D. N. Eisendrath:—This subject is one that can be approached from two standpoints; first, the standpoint of the general surgeon, and, second, that of the general practitioner. It seems to me that Dr. Buford has covered the ground in a most excellent manner so far as the non-operative treatment is concerned. I do not quite agree with Dr. Buford's view, and can only endorse what Dr. Judd has said, that the operative mortality of hernia operations in children is very low. I think that with asepsis as applied at the present time, that we can operate upon children from infancy upwards. I do believe, however, that there is a certain routine which we should follow strictly in our hospital and private practice. I have made the following my own personal rule, and it is the one followed in the Hospital for Ruptured and Crippled in New York City. If the mother can keep the child under the supervision of a capable physician, and keep that child clean while it is wearing a truss, and is intelligent enough to adjust that truss herself, I believe we ought to wait until such children are at least six years of age. If the hernia has not been cured by the truss treatment at that time I believe it is a case for operation. This is especially the case where the hernia is associated with undescended testes. It has been shown that a large proportion of these undescended or malplaced testes undergo atrophy if they remain inside of the abdomen or in the inguinal canal. This is something that I do not believe the practitioner appreciates. I believe that the majority of practitioners put off advising operation until such a time that the testes is practically a functionless organ.

There is one point I learned from Dr. Coley of New York, and that is that in operating on young children, to put on a plaster of Paris cast from the umbilicus down to about the middle of the thighs. In that way the stream of urine is directed away from where it is not wanted. That cast can be left on for a period of ten days or two weeks.

One point mentioned by Dr. Judd, and which I would like to elaborate, is this, that quite a large proportion of these cases of congenital hernia, if we saw up the tunica vaginalis, are apt to develop hydrocele afterwards. I have adopted a plan published by a German surgeon, that is, of separating the hernial sac, ligating of the proximal portion, and turning the distal portion inside. In that way we overcome any tendency to the reforming of fluid in the sac.

I brought with me to-night a little model of a "pantaloon" hernial sac which I did not cover, so that it could be seen more perfectly. The last few years we have begun to wonder why, from time to time, in spite of every precaution we take to avoid recurrence, that in the case of the best operators there are recur-

rences, whether we use the Bassini operation or the modification of Dr. Andrews. The typical appearance of such a pantaloon sac is somewhat like this: There is a main sac, and coming off from that main sac there is a diverticulum, or second sac usually located close up near the external ring and covered by a considerable mass of fatty tissue. One of these cases shows considerable lipoma. Here is what is apt to happen: We dissect out the hernial sac in the most careful manner. We ligate it as high up as possible. We take this simple lipoma and push it aside, or overlook it. In other words, we ligate it below the point at which the second sac is given off. In that way, very shortly after the operation the patient begins to strain, and there is another sac formed. It has been our practice to put our fingers inside of the sac to find if there is a diverticulum. I think this is one of the phases that is not generally appreciated, and I am sure it explains a good many recurrences.

Dr. Clifford U. Collins:—Mr. President, I am sure I have been very much benefited and instructed by coming to Chicago to-night and hearing this symposium.

We have nothing new or original to offer from Peoria on this subject. The only thing we have tried to do is to be good imitators. A few years ago we were using the Bassini operation. Then our attention was called to Dr. Ferguson's operation, and we used that almost exclusively for a year or two. We began to have a few recurrences in elderly people and fleshy patients. We had to reoperate on them, and transplant the cord. The query arose: Why wouldn't it be a good plan to transplant the cord in all cases? After that we adopted the plan of Dr. Andrews, and in the last few years the results have been very satisfactory. Of course, we had to modify his method a little bit. We use the continuous catgut suture, beginning at the lower end and suture the internal oblique muscle to Poupart's ligament, and come back suturing the inner edge of the external oblique to Poupart's ligament with the same suture and tie the two ends together at that point. Dr. Andrews' method has been very satisfactory in our hands since we began using it.

Dr. A. H. Ferguson:—Mr. President, I am pleased to be here this evening and listen to what has been said on this very important subject. At first I was interested in the truss treatment of ruptures, and I am still interested in it, but the older I become the less frequently I advise it. The truss treatment of ruptures commences of course with the infant. In my opinion the infant should wear a truss, or something similar to a truss, until the physiological age—not any empirical age. But when the child begins to walk and still has the rupture, I advise an operation. The justifiability of an operation depends upon a consideration of the individual as a whole. If there is a colossal hernia, nothing is gained by waiting. An operation ought to be performed as soon as you think the child can stand the operation, maybe within a week or two weeks, because the longer the child has a colossal hernia the larger will that hernia become, and the smaller will the abdominal cavity become. If the child is left alone until the age of six or seven years, a serious condition results in which the bowels are on the outside and the abdomen is contracted. This condition contraindicates an operation.

I was interested in the indications for hernial operation brought forward by Dr. Judd, because they fit in—I was going to say reflexly—with my own ideas. The only cure for a rupture is an operation, which should be performed on the adult or growing youth, or on the old man in trouble, provided that individual can stand the operation with impunity—with safety to life. I have been operating more and more frequently upon old men on account of the inconvenience that the hernia and truss give them. We frequently find an enlarged prostate in these old men, and I have not infrequently performed an operation for rupture and removed the prostate at the same time.

I brought with me three or four drawings, and I want to point out one or two things in connection with these drawings, because the operation which I produced in 1900 and worked at for five years before that, is not being properly understood, even by the best surgeons. They either infer, or say, without mentioning the conditions, that the anatomic operation for oblique inguinal hernia is not a

cure for all conditions of inguinal hernia. The conditions governing the operation are these. It is only suited for a majority of such cases, and that, too, only when such patients are operated upon before middle life. If a truss has been worn for from five to twenty years, which has pushed down the deep epigastric vessels to the pubic bone, this operation is not suitable. Then you must strengthen Hesselbach's triangle. Whatever operation is performed, one should aim at leaving the structures in as nearly a normal relation to each other as possible. Take Figure 1 (referring to drawing). Here is a normal canal which has the normal length. Here is a normal conjoined tendon. Here is a definite Poupart's ligament. Now the presence of a congenital hernia is an indication for the anatomic operation, which will close that upper angle, which I might call the internal oblique hernial angle. This angle being closed, the aim of the operation is to get the structures layer by layer where they belong—palpably a most simple procedure. A most important fact which is commonly forgotten is that the transversalis fascia forms the internal ring and must be fitted to the cord. I believe this is neglected by 95 per cent. of the surgeons of America. If there is a return, then the operator calls it a return after Ferguson's operation, when in reality the fault lies with the surgeon. The next thing is to draw down the internal oblique muscle over the internal ring. What is the function of the internal oblique muscle? It is to contract. It is the only structure in that region that contracts, and the function of it is to guard the internal ring during increased intra-abdominal pressure. Bring this muscle far down, and then if the conjoined tendon is normal, there will be no return of the oblique inguinal variety. If I meet with a case in which the sac is very large and the conjoined tendon is obliterated, I never pretend to apply my operation except at the upper angle. Then I split through the sheath of the rectus muscle as Halstead and Bloodgood recommended.

One word with regard to the cremasteric muscle. It is usually very insignificant, but it is not always so. I think we ought to pay more attention to the cremasteric muscle while taking up the slack of the transversalis muscle, as we see here. Probably the methods produced by Halstead and myself are the best. I sometimes employ one method, sometimes the other. Should the external oblique aponeurosis be bulging, I always overlap it after the method of Dr. Andrews.

Dr. Channing W. Barrett:—Although not wishing to direct your minds away from inguinal hernia, I wish to call your attention to a much more frequent hernia, namely, vaginal hernia. In four-footed animals the muscles that are needed in the perineal region are the sphincter muscles and at the side of the pelvic outlet there are tail muscles. As animals assume the upright position their tail muscles are converted into a second layer of pelvic floor muscles called the diaphragm of Meyer. Occasionally the atavistic tenderness of the muscles of support leave them more like the muscles in the lower animals and so we have a congenital predisposition to hernia in this region. A more frequent cause of vaginal hernia, however, is found in the traumatism of child-birth. We have in these hernias all the evils of dragging and discomfort of the inguinal hernia, plus the rectal and bladder disturbances but minus the danger of constriction.

The pelvic floor is so important a part of the abdominal wall and it is so frequently injured that I think it would be conservative to say that at least 50 per cent. of child-bearing women would profit by a herniotomy of this region after the child-bearing period is past.

The fifty, thirty or forty years of life would be passed in greater vigor and less of invalidism.

When we fully comprehend that this condition is a hernia we realize that the repair is no superficial perineorrhaphy, no skin mucous membrane operation, but a dealing with the muscles and strong fascia of the pelvic floor, a reuniting of the levator ani muscles.

Dr. F. B. Turck:—Mr. President, I think that we must remember that in nearly all of these congenital defects that interfere with function, we must not only consider the mechanical questions that have been brought out, but we must consider the physiologic disturbance as to whether we should operate or not, and

what great advantage will come to the patient in the physiological development of the various activities, such as the prevention of disturbances of digestion, which are so prone to exist in hernia. Many disturbances arise that are often unlooked for, and the cause unknown until the hernia has been discovered, which produces many reflex conditions that are often attributed to primary disturbance of digestion in the stomach and intestines, and I believe that where an operation can be performed, in most cases, to make a permanent cure, that we have come to the conclusion that that is the best way of preventing these reflex conditions and with assurance of restored health.

Dr. R. W. Hardon:—I was very much interested in hearing what Dr. Buford had to say about trusses for infants. About fourteen or fifteen years ago I saw used a yarn truss, which I have since used for infants, and found to be very satisfactory. Dr. Buford has not described it. Whether he believes in using it, or has never seen it, I do not know. The yarn truss has given a great deal of satisfaction in the East and in the clinic at the Post-Graduate Hospital here in Chicago. It is simply a skein of yarn of the usual length, which is put around the body so that the knot comes over the hernia, and the other end of the yarn comes under the perineum to be attached to the part around the back. By means of a board the length of the skein the truss can be washed out and kept from shrinking. It keeps the hernia in place, and I have seen a great many children wear these trusses where they could not wear any others because they constantly got out of place by reason of the clumsy diapers which children have to wear. In addition the cost is much less.

Dr. Buford (in closing the discussion on his part) said:—My motive in choosing this phase of the question was largely to diminish the number of operations for hernia upon infants. My experience in the surgery of infancy and childhood has been greater in the last two years than the rest of the fifteen years of my practice. I have learned the art of keeping out of the child's abdomen when I can. I have heard of the yarn truss, but have never seen one in use.

Most all of the mothers whose children come under our care are from the settlement districts, and many of the women do not speak our language, and yet we are able to teach them the use of these trusses. Many of the mothers report that never since our trusses have been applied have the hernias come down. We use almost altogether the cross body or the French patterns of trusses, and try to have the patients get two of them, so that if anything gives way on one it may be replaced by the other truss.

Dr. E. S. Judd, Rochester, Minn., in closing the discussion said: First, I wish to thank the officers and members of the Chicago Medical Society for having given me an opportunity to come down to Chicago to meet them here.

Dr. Buford's paper has given me some new points as regards the proper fitting of trusses. It is a subject I am not particularly familiar with. Our experience with the yarn truss for children has been very satisfactory. It was not my intention to give the impression that we operate on all children as soon as they are brought to us. I do not believe the time will ever come when we will do that. Mr. Stiles operates as soon as they are presented at his clinic, and has had several fatalities.

I think there is no question but what the truss will cure a large percentage of hernias in children, at the same time it is no sign that the hernia is healed when the child who has been wearing a truss discontinues its use. We have observed that if the hernia does come back it is apt to come suddenly, and a loop of the gut will be strangulated.

We have had some experience with Dr. Ferguson's operation. At first we attempted to use it in all classes of hernia cases, and now we are using it in over half of the cases. Instead of using the method in direct hernia, we found it better to transplant the cord and do the Bassini operation. However, Dr. Ferguson's method is the one we use from choice because it is the simpler operation.

Regular Meeting, Dec. 22, 1909.

A regular meeting was held Wednesday evening, Dec. 22, 1909, with the president, Dr. John A. Robison, in the chair. Prof. Thomas Jonnesco of Bucharest spoke on "Anesthesia Induced by a Combination of Stovain and Strychnin," after which the following papers were read: 1. "Survey of International Movement Concerning Infant Welfare," by Dr. I. A. Abt. 2. "Diagnosis of Rachitis," by Dr. J. W. Van Derslice. 3. "Enteroptosis in Children," by Dr. William J. Butler. 4. "Baby Tent Idea," by Dr. F. W. Allin. Dr. William A. Pusey gave a practical demonstration of the making of CO_2 Ice Crayon. On motion the society then adjourned.

STOVAIN AND STRYCHNIN ANESTHESIA.

Prof. Thomas Jonnesco. (Interpreted by Dr. Victor L. Schrager.)

Since there have been so many drawbacks and some fatalities following the use of chloroform and ether, I have made many experiments for the purpose of finding another anesthetic which would answer the purpose better. Until July of this year only lumbar punctures were made, but since that time I have attempted without fear puncture higher up in my experiments, first on animals and later on human beings.

There are two points connected with this problem and one is the level at which the injection is made and the other one is the mixture used. After a number of experiments I find there are two most desirable levels. For anesthesia in the upper part of the abdomen I select the first and second dorsal vertebræ and for anesthesia of the lower half of the abdomen I select the space between the last dorsal and first lumbar vertebræ. As the conus medullaris terminates at that point there is no fear of injuring anything. I have tried almost every substance and find that stovain is the most preferable one combined with strychnia. Stovain was discovered in 1904 and I have never claimed any priority for its discovery. I have been misrepresented by the newspapers in this respect.

My first communication was made at the International Medical Congress at Brussels, in 1908. At that time there were only fourteen cases reported in which this method of anesthesia was tried. Since that time, extending over a period of eighteen months, it has been the only anesthetic used in my clinic and the clinics of my assistants. So that up to Nov. 18, 1909, there have been 758 cases operated on by means of this anesthetic. I have never had an accident during the anesthesia except a temporary aphasia which happened in a patient at the Cook County Hospital for about five minutes. In this case perspiration was very profuse, with cold extremities. I have done twenty operations in this country by this anesthetic, eleven in New York, five in Philadelphia, and five in Chicago, making the total of operations done up to the present time 778. The method is adapted to all ages. The youngest patient anesthetized was one year and nine months, and the oldest was seventy-five years of age. There are no contraindications to the administration of this anesthetic. I operated on a physician this morning at the Mercy Hospital for a hernia. He was known to have a myocarditis which was so diagnosed by Dr. Babcock of this city. Operation had been postponed on account of this lesion of the heart, but this morning I operated on both sides under stovain anesthesia without any ill effects.

In the clinic of Dr. Robert T. Morris of New York I operated on a young man in whose case both ether and chloroform were contraindicated. He stood the operation very well.

So far as the technic is concerned, I use a simple platinum needle of small caliber and there is a detail about the needle which is important, namely, its point. The point is cut squarely, because if it is cut obliquely like the ordinary needle half of the fluid may be outside and the other half inside. The arachnoid space is small and it is necessary to enter that space with the needle. The syringe is the ordinary aspirating syringe or Pravaz syringe, which holds 1 c.c. I use the stock solution of strychnia, namely, 10 c.c. of strychnia and 100 c.c. of plain water. I use plain water which is sterilized and not distilled water. The water brings the solution nearer to the specific gravity of the cerebrospinal fluid, and for this reason I prefer sterilized water. Stovain is prepared in packages of from

one to ten centigrams according to the age of the patient and location, whether the patient is to be operated on in the upper or in the lower region. I have a series of tubes which are previously sterilized in an autoclave by dry heat. These tubes hold about ten centigrams. I take the solution from the stock solution of strychnin and introduce it into the tube. I prepare the solution on the morning of the operation, as it is known that cocain and stovain are very unstable when prepared a long time before use, and for this reason I prefer to prepare the stovain shortly before the operation. I do not heat the solution. The strychnia and stovain must be aseptic. There has been no case of infection from the use of stovain so far and heat will destroy its anesthetizing property. As I have said before, I select the space between the fir st and second dorsal vertebræ for the high injection and the twelfth to the first lumbar vertebræ for the lower injection.

As to the attitude of the patient, the patient is put in the sitting posture, but can be put in a vertical position. When the anesthesia is intended for the lower half of the abdomen it is best to keep the patient for two minutes at least in the sitting posture. For the anesthesia of the upper half of the abdomen it is necessary to put the patient at once down because the anesthesia will be complete in about two seconds and you have to operate at once. This was demonstrated at the Cook County Hospital in the case of a man from whom a piece of wire was removed from the humerus that had been sutured for a compound fracture. In this case the anesthesia was immediate. In gynecologic work the Trendelenburg position is used, the patient is kept in a sitting posture for two minutes. There has been no nausea or vomiting in any of the patients.

Dr. Thompson stated there was a distinct advantage in using this anesthetic because of the great relaxation of the muscles in the operation for hernia. It is a disadvantage to operate in a foreign country and use this method of anesthesia because the patient has a good deal of apprehension. He is prepared for something extraordinary. He has an audience of a large number of people and that scares him. A patient whom we anesthetized at the Cook County Hospital showed a great deal of apprehension and, while he admitted he did not suffer any pain, he made considerable noise. In fact, he could not account for the noise he was making.

I am not interested in the sale of stovain as an anesthetic. I am enthusiastic over its value and I hope that other surgeons will be convinced of its great advantage and benefit over other anesthetics.

Regular Meeting, Dec. 29, 1909..

A regular meeting was held Dec. 29, 1909, with the president, John A. Robison, in the chair. Edward H. Ochsner read a paper entitled "The Treatment of Arthritis Deformans." The paper was discussed by E. W. Ryerson and Carl Wagner, and in closing by the author. Gustav Kolischer and Harry Kraus contributed a joint paper entitled "Atheromatosis of the Urinary Bladder," which was discussed by L. E. Schmidt, and in closing by Dr. Kolischer. Chas. J. Drueck read a paper entitled "Vesico-Vaginal Fistula," which was discussed by Drs. Wm. Cuthbertson, Albert Goldspohn, Gustav Kolischer, and in closing by the essayist. Adjourned.

DISCUSSION ON THE PAPER OF DR. OCHSNER.

Dr. E. W. Ryerson:—Dr. Ochsner is entirely in accord with most of the views of the leading workers in this line, and his conclusions as to the etiology are unquestionably as nearly correct as any which can be formulated at present. There is no doubt that this trouble comes from some form of autointoxication. There is also no doubt that the vast majority of these cases are caused by a gastrointestinal, chiefly intestinal, form of autotoxemia.

He has not attempted to go into the differential diagnosis between the two forms of arthritis deformans, the atrophic and the hypertrophic, or osteoarthritis, as the more modern terminology gives it, and his views as to the frequency of the disease in man and woman are at variance with those of some of the other writers. For instance, Goldthwait considers the hypertrophic form much more frequent in man, and the atrophic form much more frequent in woman. What-

ever views we have as to the etiology, it is well in most cases to begin with a careful consideration of the intestinal tract, and to put our patients upon laxatives, keep the intestines cleaned out, keep the bowels moving and free from very offensive odors, and for this purpose laxatives and some intestinal antiseptics, such as betanaphthol, and salol are of great benefit at times. There is a large class of cases in which the intoxication is not of gastrointestinal origin, but in which it comes from other sources. I have seen cases promptly relieved at the beginning of the trouble by the removal of the tonsils, which had been the seat of a chronic inflammatory process. I have seen three cases in which caries of the teeth were apparently the cause, and in which, after these teeth had been removed and the cavities had been cleaned out, very prompt improvement ensued. These remarks, of course, have reference to those cases which have not progressed so far as to have actual destruction of the cartilage in the joints. For the advanced cases in which contractures and deformities exist the treatment that has been outlined is most excellent and is entirely in accord with the treatment recommended and advised by the leading authorities. The deformity should be corrected, and the joint put up in the best position, so that erosion of the cartilage will be minimized and the patient will recover from the original disease, the autointoxication. By following this line of treatment a complete cure in some cases is to be obtained. In many cases presenting apparently typical osteoarthritis the disease will be found to be due to the gonococcus. Dr. Ochsner stated that many cases required to be differentiated from the infectious disorders of this type; hence the differential diagnosis at times is difficult. I have seen a number of cases of arthritis of the knees, and other joints caused by the gonococcus, which were benefited by the vaccines. In the advanced cases the only thing is to resort to corrective and protective measures. A careful search for the original source of the autointoxication is by all odds the most important feature in the early stages.

Dr. Carl Wagner:—Dr. Ochsner's paper would have been just as timely eighteen years ago as it is to-day, because at that time French surgeons called attention to autointoxication from chronic bowel disturbance, especially in cases of chronic colitis and spoke of stercoremia in which the temperature goes often up to 104°. Cases of long standing slow but continuous autointoxication may give clinical pictures which correspond to many various febrile diseases or affect the heart, liver and kidney function and not infrequently the joints, which latter was so well pointed out to-night by this important paper of Dr. Ochsner.

With reference to immobilization, which is one of the most important factors in the treatment of any joint affection, I wish to say that many cases which enter the hospitals after unsuccessful treatment at home show that immobilization was not carried out correctly, and this is perhaps due to the fact that text-books are not explicit enough on this subject, especially as in regard to the proper angle in which the joint must be immobilized.

The excuse for my rising is to make the suggestion to Dr. Ochsner to add to his paper when it goes into print some illustrations of the proper made of immobilization, and I am convinced that it will be very welcome to many and do a great deal of good.

Dr. Ochsner (closing the discussion):—I am very glad to have had a further elaboration of this subject by those who have taken part in the discussion, and more especially the question of the various sources of autointoxication. In my paper I did not have time to enumerate all the sources of autointoxication, but any one may be the cause of arthritis deformans.

The position in which the extremities are immobilized is also of the utmost importance. The muscles must be at equilibrium or you are almost sure to fail. Permit me to cite two cases to more fully illustrate this point. I have now under my care in the Augustana Hospital a woman suffering from arthritis deformans to a marked degree. About a year ago I anesthetized her, put the lower extremities in the corrected position and immobilized them. The correction of these deformities was so difficult that I thought her condition would not permit correction of the deformities of her upper extremities at the same time, consequently I simply immobilized the upper extremities in the positions they then occupied. A month later I wanted to correct the deformity of the upper extremities, but she

would not permit it. The pain in her upper extremities continued because the muscles were not held at perfect equilibrium. The flexors had the advantage over the extensors and as a result the spasms continued. She got little sleep and did not improve in general health. Finally about six months after putting the lower extremities in the proper position she permitted me to correct the faulty position of her upper extremities. Since then she is steadily improving, her nutrition becoming better, she has gained about forty pounds and is now able to walk.

The other case is one that came to me for treatment about seven years ago. She had then been suffering from arthritis deformans for about fourteen years, had been bedridden for several years and had a large bedsore over the sacrum. The case seemed hopeless, but her sisters were very insistent and I finally consented to see what could be done for her. I treated her according to the principles outlined in the paper. The bedsore healed and the patient was well on the road to recovery, when one day the trouble involved the iris of both eyes. The pain became excruciating. Nothing that even an experienced oculist, who was consulted, could do was able to relieve her condition in the slightest and she succumbed at the end of about a year. These two cases, as well as many others, have conclusively proven to me that pain is the most potent factor in reducing the patient's vitality and in producing malnutrition, both of which unless relieved prevent recovery.

Permit me to repeat that I consider the diagnosis of the utmost importance, as only after a proper diagnosis has been made can we hope to institute proper treatment.

DISCUSSION ON THE JOINT PAPER OF DRS. KOLISCHER AND KRAUS.

Dr. L. E. Schmidt:—I would like to say a few words in regard to this subject, because I think it is a matter of considerable importance. The condition, I am inclined to believe, is not recognized by the general practitioner and the diagnosis is practically only made by the specialist who is familiar with cystoscopy.

In making the diagnosis of atheromatosis of the urinary bladder it is essential to get a good history of the case, in order to see whether there are general diseases present which may possibly produce bladder disturbances. One should always look for arteriosclerotic conditions for general diseases, such as Bright's disease, diabetes, and other general conditions that are occasionally met with. After I have gone over the history of the patient carefully and made a general examination, I examine the organs that are common in both sexes, which may produce bladder symptoms. For instance, kidney and abdominal conditions, liver disturbance and particularly appendiceal conditions, are oftentimes productive of bladder symptoms. If the patient is a male I next examine the male genitalia, if a female, I examine the internal genitalia. Of course, it is not to be forgotten that in making a diagnosis of atheromatosis of the bladder there may be two or more conditions present, and I think in the paper it was mentioned, for instance, that oftentimes enlarged prostate was present. While a diagnosis of enlarged prostate is often made in these conditions, yet the true condition, so far as the symptomatology of the patient is concerned, is one of atheromatosis of the bladder. The diagnosis is largely based on a cystoscopic examination. With the cystoscope one can exclude all the ordinary bladder diseases. Dr. Kraus mentioned varices of the bladder, tumors of the bladder, stone in the bladder, and so forth, which may be the cause of the bladder symptoms. In these cases of atheromatosis of the bladder one will see exactly what Dr. Kolischer and Dr. Kraus have described in their paper, and there is no use of repeating details here, because there is absolutely nothing else to be seen in a bladder which is affected only with atheromatosis, except what they have described. I can only say that in the past ten years this condition has been brought to my notice very frequently, and the diagnosis in these cases has been confirmed by the simple fact that the patients have been more or less relieved by the treatment that Dr. Kolischer and Dr. Kraus have outlined. In some instances I have added a little local treatment to the general, because it is a general condition, and local treatment of itself is not of much avail. Where hematuria is often pronounced and particularly if it

persists, there is no objection to resorting to instillations of nitrate of silver directly into the bladder.

I can recall no less than three cases which were referred to me by life insurance examiners and by general practitioners who are in the habit of examining the urine of their patients at stated intervals regularly and carefully, and in all instances microscopic quantities of blood were found. Then the question arose, where did this blood come from? In diagnosing the condition it is always necessary to exclude all the other possibilities, and I have always proceeded in the manner outlined. In some instances, as the essayists have said, one can see these tortuous, rigid, little vessels still bleeding, and from these one can make the diagnosis of atheromatosis and also locate the source of the blood in the urine.

My treatment of these cases has been practically the same as that which has been outlined. I have always given iodid of potash in small doses for a long period of time, and occasionally local treatment. The signs and symptoms may recur from time to time, and the treatment therefore should be persisted in, or be repeated from time to time.

Dr. Kolischer (closing the discussion):—I have not very much to say other than this, that our excuse for presenting a topic of specialistic interest to a general meeting like this was to show to the profession at large that there is an excuse for the existence of specialists; that if any operation becomes very popular among the medical profession, it is a good thing to put the brakes on. The results of operative treatment lead to an over-rating of the possibilities of the surgery in this condition of the bladder. The great boom that has existed in the last few years for prostatectomy has not only led specialists but general surgeons to excess in operative work, and it is very important to know that there is a difference in results obtained in this way, and that we may get temporary results by brilliant surgical work; that is, we do not kill our patients, and we send them home from the hospital apparently cured, because they do not die, but after a while, after they get over the effects of what we have done, they are just as bad off as they were before operation. Surgical results should not be judged by the primary mortality, but by definite ultimate results. In this particular instance we would like to call attention to the fact that the diagnosis is about the most important thing in genitourinary cases. If we diagnose a patient's condition correctly, why should he be exposed to the dangers of a serious operation by a brilliant surgeon, when he can be treated successfully without operative procedures? A surgeon may operate on such patients for a condition which, although it existed, is not the cause of the trouble. If we have succeeded in impressing that point upon the minds of the gentlemen present, we will be perfectly satisfied.

DISCUSSION ON THE PAPER OF DR. DRUECK.

Dr. Wm. Cuthbertson:—Dr. Drueck has covered this subject so thoroughly that he has left very little to say on it. As he has said, the cause of vesico-vaginal fistula is first and foremost pressure of the head during delivery, which causes subsequent sloughing. Again, it may be caused by the use of pessaries which have been neglected; it may be caused by the pressure of a calculus from the interior of the bladder, these being the most important causes, and also where the bladder has been injured by surgical measures which have been instituted for diseases of the female genitalia. A vesico-vaginal fistula may also be caused by carcinomatous or malignant processes which involve the vesico-vaginal septum.

The treatment of these cases resolves itself into, first, surgical and second, palliative. Where the fistulæ are of large size, palliative treatment does not enter into the question at all. Surgical measures must be resorted to to effect any hope of a cure. Some of the smaller fistulæ and recent ones tend to heal spontaneously, and if the parts are kept thoroughly cleaned, by means of boric acid douches, or with weak solutions of lysol, the injured parts will heal themselves. Nitrate of silver may be resorted to, and often where a moderate degree of cicatrization has occurred, the use of the actual cautery will sometimes effect a cure without resorting to any further surgical means. In spite of all measures occasionally a fistula will be met with which absolutely refuses to heal, and in these conditions the

fight of the patient is a pitiable one indeed. Before resorting to operation in these cases, all infected processes must be removed by the use of disinfectants, such as have been mentioned before, namely, boric acid, lysol, and the use of weak solutions of nitrate of silver. A large majority of these conditions, however, cannot be cured without the use of surgical means, and before resorting to palliative treatment the problem should be presented to the patient whether or not she will undergo palliative treatment, which will extend over weeks or months, with the prospect of a possible failure to cure, or whether she is willing to undergo surgical measures immediately, which offer the most definite prospect of a cure, and in this way relieve her in a very much quicker manner of the abnormal condition.

Dr. Albert Goldspohn:—The remark was made by the last speaker that in fistulæ of large size palliative treatment is of very little consequence. I think that is hardly correct, because what you may call palliative treatment is frequently good preparatory treatment. In some of the worst cases the fistulæ are located in an unfortunate manner, not in the center, but toward one side, and there will be some cicatricial abnormality in the vaginal wall adjacent to the fistula, so that the tissues which are needed for a plastic would be hardly available. Such cases have been prepared, greatly improved for surgical success by some of our older gynecologists by a prolonged treatment, which is calculated to absorb exudate in the first place, then distention of the vagina by means of inflated tampons or bags, or occasionally by massage of cicatricial formations in adjacent portions of the vagina or bladder wall, so that a greater area of tissue will become available for plastic work than originally was available.

In regard to the technic of the plastic, nothing has been said by the essayist about it. I think much good has been obtained in operating for vesico-vaginal fistula by adopting the principle of getting two layers of sutures, one, the inner layer, which turns the mucosa, which is not cut away, but simply split away from the vaginal layer of tissues, turned on edge, or seam of mucosa inward and sewed by absorptive catgut sutures, first, and then making another tier of sutures outward that unite the vaginal part of the structures, the inner tier of sutures aiming to protect the second or outer layer from contact with the urine.

Dr. Gustav Kolischer:—The paper of Dr. Drueck is timely, and I think we should appreciate what he has said with reference to palliative and operative treatment of cases of vesico-vaginal fistula. Hundreds of cases of vesico-vaginal fistula are reported in which healing is said to have taken place simply under treatment. Personally, I would object to the use of silver nitrate, for the reason that it leads to extensive loss of tissue substance, and that is one thing we want to avoid in dealing with vesico-vaginal fistula.

As to the pathology of the condition, I would mention one point, namely, that vesico-vaginal fistulæ do not occur in the lower part of the vagina, because the bladder is not attached to the lower part of the vagina. These fistulæ occur in the uppermost part of the vagina, where the bladder is in contact with the cervix and vagina. (Here Dr. Kolischer demonstrated this by diagrams on the blackboard). The lowest part of the bladder rests against the uppermost part of the vagina, the anterior fornix. It is here that fistulæ will occur, and most fistulæ are produced by pressure during parturition.

As to surgical intervention, there was one statement made by Dr. Cuthbertson which should be accepted without any reservation, namely, that fistulæ of any size require surgical treatment, if one does not want to expose a patient to all kinds of dangers, with the possibility of absolute invalidism for months and months. A large fistula should be operated on.

As to the operation, the author of the paper tells us that there are many methods of dealing with vesico-vaginal fistulæ. It is the variety of methods which points to the insufficiency of all methods. Such a statement was true thirty years ago, but it is not so nowadays. Now, there is only one operative method described of dealing with these cases, and it is based on two fundamental principles. One is to avoid tension in our plastic work, and the second principle was hinted at by Dr. Goldspohn, that is, we should not operate in the old-fashioned way of taking away substance, but bring broad surfaces in contact with each other. That is the only way to deal with vesico-vaginal fistulæ, and the

results from so doing are so excellent that relapses in operations for vesico-vaginal fistulæ are rarities, and if they occur, they are either due to improper technic or to some accident which may occur once in a while in modern surgical work. We do not any more dilate the vagina or try to stretch cicatricial tissue, but we do that which was first pointed out by Schauta and Fritsch, namely, we make the bladder and cicatricial tissue of the vagina movable by incisions. If we have to deal with an old fistula, the whole vagina and anterior wall are cut loose. We detach the vagina and detach the bladder first from the pubic bone, and then we separate the bladder from the vaginal mucosa, and that is the strong point of the operation. We then suture the bladder separately and cover it with vaginal mucosa. We do not do the old-fashioned operation any more. We separate the bladder from the vagina in this way (illustrating), and we invert the muscular coat of the bladder, suturing it up, and suturing the vagina, and there are no relapses if we operate in such a way.

So far as the technic is concerned, there is only one technic nowadays. This method has proven successful in the hands of men who have operated on hundreds of cases of vesico-vaginal fistulæ. We cannot judge any operation by the statistics of one man, but we can come to some conclusions from the statistics of many operators. There is absolutely no reason for talking about individual operations in the treatment of these cases. There are some fistulæ where it is impossible to cover the whole defect, and in such cases we resort to the Freund operation. We use the uterus to cover the defect. The results are satisfactory, so that in these days there is no such a thing as an inoperable vesico-vaginal fistula. The method of closing the vagina for fistula is practically unknown to-day. I recall but one case in the last ten years where a man reported the closure of the vagina in order to close up a vesico-vaginal fistula.

As to those cases of fistulæ where the whole urethra has been lost either by the first trauma or later on by so many old-fashioned unsuccessful operations, even in these instances we can succeed if we employ the right method. We close up the bladder first, and employ a plastic for forming a new urethra, which was devised by McArthur and Dudley, and by the method of Gersuny of injecting paraffin, thus supplanting the lost sphincter.

The main thing in closing up fistulæ in the vagina is not to lose any substance. No one can tell how much tissue is going to mortify and how much tissue is going to be lost by demarkating granulations. Quite often apparently dead tissue recovers. We do not want to lose any substance. If there is any sloughing we wait until necrosis and necrobiosis demarkate themselves. We should never cut away tissue substance if it can possibly be saved. So in estimating all that has been done in cases of vesico-vaginal fistula, we should apply surgical principles to the existing condition. The same rules which hold good for a plastic anywhere else should likewise hold good in the vagina.

Dr. Drueck (closing the discussion) :—In presenting my paper I tried to bring out the point that there were different classes of fistulæ. There are those that have small apertures, and these we may attempt to close without plastic work. There are those in which it is unnecessary by any means to do any operation which will require an anesthetic. On the other hand, there are those cases which we have to operate upon, but which it is not fair to the patient to say, you must be operated on right away. I hold that many of these cases of fistulæ can be cured in the old or late stage by operative procedures. If we could always get a fresh fistula, or one with recent adhesions, it would be easy perhaps in all cases to do plastic work; but I have been surprised myself at some of the worst cases that have healed up while I was preparing them for operation. During this preparation we found ulcerations, salt deposits and crusts and scabs throughout the vagina. I believe those cases will heal up a great deal better if we take time to properly prepare them. During this time we will find shreds of necrotic, foul, rotten masses hanging from the vaginal mucous membrane, which can be of no use to it; they are septic in nature, and had much better be removed.

My experience has been at variance with that of Dr. Kolischer's, in that I have seen cases that were operated on by good men in which relapses occurred. I was afraid to open up the subject of that type of operation, namely, plastic work,

because to do so would consume too much time. I do believe, however, that we will get a great deal of benefit if we will take time, say a couple of months, in properly preparing or cleaning up the vagina. I do not believe that we can properly cleanse the vagina in a day or two's treatment before an operation.

Regular Meeting, Jan. 5, 1910.

A regular meeting of the Chicago Medical Society was held Jan. 5, 1910, with the president, John A. Robison, in the chair. The following papers were read: "Bad-Nauheim, Its Treatment and Therapeutic Value" (by invitation) by J. H. Honan, Berlin. "Physiological Therapeutics with Special Reference to Private Practice," by Wm. S. Sadler. Discussion opened by A. R. Elliott and Bernard Fantus, and closed by the essayists.

DISCUSSION ON THE PAPERS OF DRS. HONAN AND SADLER.

Dr. Arthur R. Elliott:—Dr. Honan has said that in his travels in America he has been able to discover only one place, namely, in Harvard University, Boston, where there was a properly equipped hydrotherapeutic institute, and where instruction was given in hydrotherapy. Far in the scientific backwoods, as we are in America, we are not so benighted as that. Evidently he has not been in Chicago sufficiently long to thoroughly investigate conditions here; for there is at least one institution here where instruction is given in hydrotherapy, namely, at the Post-Graduate Medical School, and moreover the institution over which Dr. Sadler presides is an excellent one, where hydriatric and others methods of physical therapy are carried out and employed in a practical manner. Furthermore, in one of our city hospitals, St. Luke's, there is a well equipped hydrotherapeutic department which is under the care and direction of a thoroughly well skilled director.

Dr. Sadler has brought out a valuable point which should be grasped, that is, the availability of these methods of physical therapy for employment in private practice. By a very simple technic and attention to a few details, many of these methods can be employed at the bedside and in ambulatory cases. It is important that we grasp this thing and by employing these measures, as we may when occasion arises, and becoming familiar with them, I am sure that eventually we will use them in our practice much more than we do at present.

Dr. Sadler is to be commended for his honesty in segregating the effects of hydrotherapeutic measures and in differentiating the psychic results which accompany genuine physical effects from those due to the procedure proper. These methods are all more or less suggestive, and bring in the element of suggestion, and, it has seemed to me, that the brilliant effects which sometimes follow certain electrical procedures, notably the high frequency current, are psychic rather than physical. They do not bear any particular relation to the length of time they are employed, the dosage, or the intensity of the current.

I have had some experience in hydriatric measures in the treatment of certain cardiovascular conditions, notably those attended by hypertension. The electric light bath and hot air cabinet, followed by Scotch rubs, frictions, etc., have been employed. The effect of these measures on blood pressure is noticeable immediately after the bath, there being a diminution of five or ten per cent., this immediate reduction to that extent being observable directly after the bath. If we consult the blood pressure record after a course of baths, or after hydriatric procedures have been instituted, we will often be disappointed, not to observe a permanent or apparently lasting effect. That is not to be considered as a proof that no effect has been secured, because the subjective record, the patient's testimony will often show that the symptoms due to the hypertension—headaches, vertigo, epistaxis, etc., have been relieved, thereby furnishing justification for the procedure.

All functional and organic disturbances which are attended or associated with toxemia and hypertension fall naturally into the category for hydrotherapeutic treatment.

I would like to ask Dr. Honan what he would advise in the way of treatment of cases of myocarditis attended by hypertension, since this is a subject which interests me greatly? I would ask him what he would do with a patient who had a blood pressure of 200 mm. or more, whether he would advise Sprudel baths in these cases or not. My impression from the experience I have had with these baths is that they have the effect of increasing tension and disturbing the circulatory equilibrium. Last summer I had a woman go to Nauheim whose tension varied from 200 to 230 mm. I did not send her to Nauheim, but she went there. I gave her the address of a well known physician and he withheld the Sprudel baths. This gratified me because I did not think they were available in her case; he however ordered the Sprudel bath for her husband and two daughters, although I was not aware that there was anything the matter with them.

Dr. Bernard Fantus:—I am delighted to notice that this subject of non-medicinal or so-called physiologic therapeutics has been admitted to the floor of this society, and I regret that there is not a larger attendance. If the subject of appendicitis or some other surgical topic were up for discussion, the chances for an over-crowded hall would be great; but there seems to be very little interest taken in therapeutic subjects in general, and in this phase of therapeutics in particular. It is, however, to be hoped that in spite of the comparatively small attendance, such evenings will be repeated, because I do believe that once the profession becomes well acquainted with these measures, they will be more enthusiastic for them. Even from a financial standpoint, I believe physiologic or rather physical therapeutics pays; it pays perhaps quite as well as surgery. Of course, you cannot charge as large fees for each treatment, but the patients come to us again and again for treatment, and ultimately the fee will be perhaps quite as large as that of the surgeon, although more actual work must be given in return. I am sure that many a practitioner could build up a large practice in a short time if he knew how to use these measures of non-medicinal therapeutics and for this reason I am very enthusiastic over them myself, as well as for the reason that they are capable of accomplishing things that medicines cannot do, just as medicines can do things that these measures cannot accomplish.

While I thoroughly agree with what Dr. Sadler has said, I should like in a friendly manner to make a few criticisms of some of the statements he has made. In the first place, I dislike the term "physiologic therapeutics," because it suggests that medicinal therapeutics is pathologic. I do not believe that medicinal threapeutics is any more pathologic than so-called physiologic therapeutics. It is not physiologic to put a person in a cold bath, and keep him there for a certain length of time. It is not physiologic to roast patients with hot air, it is not physiologic to pound them as is done in giving massage, and it is not physiologic to subject them to live steam. These measures are extraphysiologic as far as I can see. It is absolutely physiologic, on the other hand, to administer iron in cases of anemia, thyroid in hypothyrea, or alkalies in the treatment of hyperacidity.

Then, again, our friends who are particularly interested in this subject make statements that these physiologic measures, so-called, are not dangerous or non-toxic. I believe they are quite as liable to do damage or to cost life as medicinal measures. Let me illustrate by giving one example. Massage of an abscess is just as dangerous as the giving of a dose of fatal poison.

With the statement made by Dr. Sadler that cumulative effects or after-depression are not noticed in case of the physical remedies, I must take issue. As a matter of fact, in another paragraph of his paper he states that favorable cumulative effects are noticed. I have noticed unfavorable cumulative effects. If we apply stimulating hydriatric procedures to erethistic neurasthenics, we are liable to aggravate the neurasthenia. That is quite well known. I have seen a number of examples of neurasthenics who have been in sanatoriums, and who were worse on leaving these institutions than they were when they entered, having been exhausted by excessive hydriatric treatment.

On the whole, I deprecate the position that is taken that these measures of treatment are particularly wholesome and extraordinarily permanent in their results. They are no more or less so than are drugs. I believe, for instance, that

when Kellogg says that digitalis should be thrown aside because cold applications over the heart slow and strengthen the heart beats, he is all wrong, because, in the first place, these cold applications act only for a short time, while digitalis acts for a long time, and if a patient is permitted to choose between digitalis and a cold application, I think he would prefer the former. While both have their places, I deprecate the tendency to extol one over the other. Nevertheless, it is necessary to be enthusiastic about things in order to awaken the profession as to their use and importance. The physician who knows nothing but chemical remedies, or drugs, is as much of a quack as the one who knows nothing but physical remedies. Massage should be practiced by every physician, not general massage, which is really the least useful form of it, but local and special massage. Then only will massage do the good it can do. When a professional masseur must be resorted to in the treatment of sprains, or contusions, fractures or dislocations, it is likely to be done either too late or not at all, as it may be impossible from a financial standpoint; while if the physician is a master of massage he ought to be able to institute the treatment at first, and either teach the patient or the patient's relatives to apply it afterwards, and only in that way will the real benefit of massage be obtained. Even general massage of the sick should be practiced by physicians only, that is, every masseur should be a physician, as it is only then and in this way that the best effects can be obtained.

Dr. E. P. S. Miller:—When I was a young lad of about six years my father, who had been an over-worked business man, after consulting with every physician of the regular profession, was taken to a water cure in Columbus, at which place he died. Ever since that time the thought of a water cure has hung with heavy weight over my mind. But I am glad that water cure in these days has been resurrected from charlatanism, and brought into the ultrascientific state, as described to-night. It seems to me, that speakers and writers in following the lead of our esteemed Osler have taken particular delight in being iconoclastic in regard to drug treatment. The reason of it is this: The study of medicinal therapeutics is a difficult one; that not sufficient time is given to it in our medical colleges. Medical students are more absorbed in surgery and the prospects of large fees from surgical operations, and hence the subject of medicinal therapeutics is difficult, its importance is not realized by the medical student, and so to-day men are condemning drugs largely because they do not thoroughly study them, and because reliable drugs are not furnished to the profession.

An old physician spoke to me the other day and said he had some trouble, and inasmuch as he could not tolerate morphin, he took some hyoscyamus pills. He was to take these pills at intervals. He took one every hour without effect until he had taken the whole six, and then the effect was produced at once.

Many of us have to practice our profession among the extremely poor, in the families of men who earn from $10 to $20 a week, and in these homes the practice of hydriatric measures is one of more or less difficulty but I will say that in the treatment of scarlet fever and other exanthemata I have obtained good results by the use of the Epsom salt baths, using an ounce of Epsom salts to the pint of water, and using a sponge bath at the proper temperature. I either give it myself or instruct some member of the family to give it, taking time to give the bath thoroughly, and I should judge that some of the effect was due to the contact of the chemical particles with the human skin.

Dr. W. Franklin Coleman:—I have been very much interested in this subject, and in reference to hydriatric measures I wish to say that I had an associate with a tubercular history who was taken with typhoid fever. I suggested the use of cold baths, which in those days were looked upon with horror. I put him in a bath, at 100 degrees, then lowered the temperature to 70, kept him in the bath for fifteen minutes, and at the end of that time his temperature dropped 3 degrees. This treatment was repeated mornings and afternoons and at the end of three weeks he was well. This was about thirty years ago in Toronto, where I introduced the use of the cold bath in high temperature.

Later I began to take more interest in electricity, a subject which may be properly discussed under the head of physiologic therapeutics. I do not take any

exception to what was said with reference to the psychic effects of electricity, but when it is said the effects are *only* psychic, then I protest. Electricity can produce more varied physiologic effects and has more varied applications in medicine than any other one remedy. Why? In the physiologic laboratory it can be shown to produce sedation, stimulation of the nervous, the vasomotor and the muscular systems. It increases metabolism and respiration. The salts in the urine are increased, the blood tension is lowered, and I cannot stop to enumerate the various things which electricity will accomplish. We may more easily understand and apply hydrotherapeutic measures; we can see water and handle it, but electricity is considered one of the mysterious things. Fundamentally we do not know what it is. What of that? We do not know what we take for breakfast. We do not know fundamentally what life is, what heat is, what anything is, but we do know their phenomena and those of electricity, and we know its laws more accurately than we know the laws of heat, light and sound.

Recently an able oculist in the East experimented with the high frequency current. He treated almost every known condition of the eye and proved what could not be done with this current. He did not improve his cases of optic atrophy, of opacity of the vitreous or muscular paralysis. He remarked that this current probably did as well as any other.

In 1902 I introduced the use of the alternating current in cases of optic atrophy, and found it best stimulated the optic nerve tract and very greatly improved vision in 66 per cent. of the cases treated. Since the high frequency current does not stimulate the optic nerve tract or muscular contraction, and is not electrolytic, it cannot be expected that it would improve optic atrophy, muscular paralysis or opacities of the vitreous respectively. So in electric as in drug therapy only the initiated succeed.

Dr. Sadler made reference to his inability to get competent help. I can second his remarks in that respect. I have had nurses apply the treatment, and some of them imagine that because they are graduate nurses they know how to apply massage and to do things of that kind. But I believe the treatment should be under the control of a doctor. They do not teach these subjects in our medical colleges and hospitals as they should do.

Dr. John M. Dodson:—I would like to say a word or two in defense of the medical schools and to remark that it is foolish to expect that our medical schools can teach all of the things demanded of them, because of the lack of time required to do it well. It seems to me, too much is expected of the average young man in his limited time in a medical school, and it is because we have tried to burden him with so much and treated him as if he were a sausage to be stuffed, that we have gotten such poor results in the past. Even in the four years we now have of nine months each the ground which can be covered by the best young man is limited. Much pressure is brought to bear upon the medical schools on every side to induce them to introduce these numerous minor topics in the curriculum.

Only a short time ago I had an interview with the medical director of a fraternal insurance society, who said that it was a mistake, in his judgment, that we were not devoting a good deal more time to teaching our students how to make life insurance examinations. These things cannot all be taught in the medical college. I am inclined to think that if our medical schools devote too little time to non-drug therapeutics, one reason is because we have had foisted upon us such terms of physiological therapeutics, which have no right to exist. They have incurred our disfavor. We have erred in the past in keeping students on the benches too many hours a day, seeking to stuff them with facts instead of trying to develop them into reasoning, thinking beings. Every graduate of a medical school has much to learn after he graduates. I should not agree that the physician should give these massage treatments himself. His time is valuable, and if he undertook to spend half an hour or three-quarters of an hour, or even fifteen minutes on many patients in giving them massage, it is obvious that his ability to see other patients would be much curtailed. Moreover, I do not think the giving of massage is the function of the physician. The nurse ought to do this in many cases, and instruction in massage should be included in the curriculum of the schools for nurses.

Dr. Worcester of Waltham, Mass., who has the finest school for nurses in this country, calls nursing "service to the helpless sick." He makes his nurses feel that anything in the nature of service is worthy of their thought and attention. They are taught hair dressing, manicuring, how to read, etc. She is with the patient all the time, day in and day out, and it is her business to know these things. If a nurse is properly taught, and the physician knows how to direct her to utilize all of these non-drug therapeutic appliances, then they may be used to advantage in private practice.

Dr. Honan (closing the discussion):—I wish to say in answer to the remarks of Dr. Elliott, that if there is a good scientific hydrotherapeutic institution in Chicago I am certainly very glad of it for, if so, I have been misinformed.

In regard to the other question that was directed to me, asking what I would do with a patient with a blood pressure of 220, and as to whether I would give a Sprudel bath, I will say that a patient with such a high blood pressure as that should be handled with the greatest care, and I almost never give a Sprudel bath to a patient with a blood pressure of more than 210, and then I have the attendant take a whisk-broom and extract almost the entire carbonic acid from the natural water, giving the patient a rather warm bath, which tends to bring down the blood pressure.

In regard to giving a series of baths to the rest of the family, a point which was referred to by Dr. Elliott, we have in Bad-Nauheim sixty-four or sixty-five doctors. We have perhaps one, maybe two, who are commercial enough, if the family has money, to even give the dog baths. (Laughter.) One of my American colleagues, a fellow alumnus of Rush, recently said to me in Nauheim that he brought a patient over there for treatment. The patient was treated by a physician there, and he went the next day or two or three days later and found the patient's little son, 12 years of age, of whom the doctor was very fond, and said to him: "Well, George, let us go out and take a walk." George replied: "I can't, I have got to take my bath." The doctor said, "Are you taking the baths?" George replied, "Yes." Unfortunately, as I have said, we have two men in Nauheim that do these things, but I think I can safely say the other sixty-three are honest enough to give baths as they should be given.

Dr. Robison:—Can those baths be imitated in this country?

Dr. Honan:—Those baths can be given artificially.

Dr. Robison:—In accordance with the directions of Dr. Besley Thorn of London?

Dr. Honan:—Yes; he has given good directions for the Nauheim baths, as they are carried out throughout Germany. The salts are ordered directly from Bad-Nauheim either in the concentrated mother lye or in the crystallized form of the solid salts, and then all that is necessary to do is to add the water and common sodium chlorid; but as they are carried out in Germany they are given from the extract of the salts taken directly from the Nauheim springs. These baths can be given here in America, and I think the best results are obtained from the salts coming directly from Nauheim.

In regard to the treatment with Nauheim baths in private practice, you do not get the best effects in the home of the patient. I have given the baths in Berlin, and we have frequently ordered them from the Charité Hospital and we find we do not get as good results in the home as we do in a hospital or sanitarium, where we can have absolute control of the patient. There are a great many details in carrying out the Nauheim baths that are very essential and which may be overlooked in the private home bath.

Dr. W. S. Sadler (closing the discussion):—I agree with all the speakers who have condemned the term "physiologic therapeutics." I did so myself in the beginning of my paper. But since the publication of Cohen's system of physiologic therapeutics, so-called, I think we may as well recognize that the term has come to stay. "Non-pharmacal" or "non-drug" therapy are, of course, better terms.

With reference to the criticism made by Dr. Fantus regarding "cumulative effects," there is one point, I think, he has overlooked. There is a cumulative effect in physical therapy just as there is in physical exercise. The longer you

work in a gymnasium the stronger your muscles grow. Physical therapy strengthens the peripheral heart by exciting its action and thereby strengthening the vascular apparatus. I did not intend to convey the idea that physical therapy gave no cumulative effects in this respect.

I agree with those who have said that general practitioners will not personally administer these methods of treatment; but I believe the time will come when we will train our nurses to administer a standardized technic. While I agree that physicians ought to know how to do these things, I do not believe these methods will be successfully introduced in private practice except where we have trained nurses and assistants to do the work. Of course, we know that we can dispense our own medicines, but we do not do it. We prefer trained pharmacists to do it for us—men who know how to do it. I do not believe these methods will be personally administered by the physicians themselves, we will have to have a corps of properly trained nurses to assist us in doing this work.

In regard to the question of treating poor people, we have a great deal of this to do in our dispensary practice. With the aid of nurses we find little difficulty in practicing hydrotherapy among the poorer classes. In connection with what Dr. Dodson has said, I agree with him that the medical school curriculum is so overcrowded, but if the dispensaries of our medical schools were equipped with simple apparatus and hydrotherapy were clinically demonstrated to medical students, the students would appreciate the instruction, and when they went out to practice it would be invaluable. There is a misconception on the part of the profession as to the adaptability of these things to private practice, and the failure to find competent nurses is largely the reason why these methods have not been more generally accepted.

CHICAGO MEDICAL SOCIETY—SOUTH SIDE BRANCH.

REPORT OF ACTION TAKEN BY THE SOUTHERN DISTRICT MEDICAL SOCIETY IN MEETING HELD FEB. 18, 1910.

Note.—The Council of the Chicago Medical Society at a regular meeting, held Feb. 8, 1910, divided the Southern District Medical Society into three (3) districts. This was done without the consent of the branch and without any notification to the branch.

President:—We will interrupt the program at this point for the purpose of bringing before the society a matter of great importance, not only to the members of this branch society but to the entire membership of all other branch societies.

Reference is made to the proposed or actual division of the Southern District Medical Society by the action of the Council of the Chicago Medical Society. As to the legal status of this question we are not at present concerned; but we are concerned in the matter of entering a vigorous and emphatic protest against the manner and method of thus dividing the Southern District Medical Society.

The society from its beginning to the present has done a work of which we are not ashamed. Interesting subjects in medicine and surgery have from month to month and year to year been given here in these halls and presented by representative men. A glance at the program given less than a month ago and the character of the men presenting this program, as well as the program to-night, show the character of the work being done by this society. Such work has not been done for fun nor for the mere passing of time, but for the benefit and help of the society at large. To suddenly terminate this good work without our notice or knowledge seems unfair to say the least.

If there is no objection on the part of the society we will now hear from Dr. Tuteur, who has a full transcript of the transactions of the council of the Chicago Medical Society the night this calamity happened:

Dr. Tuteur:—That this matter of the Council may be fully understood, I will say that I have in my possession a transcript made from the minutes of the meeting of the Chicago Medical Society, held on Feb. 8, 1910.

(Paper read by Dr. Tuteur.) (Extract from Council minutes of Feb. 8, 1910.)

"The president called for the report of the Organization Committee, Dr. McGuire, chairman: The Organization Committee has the pleasure of reporting

that there has been a good deal of work done in organization work. Printed slips have been sent out telling why every one should be a member of the C. M. S.

"The committee wishes to report that it is the sense of the committee that the South Side branch is altogether too large and unwieldy. It has about 550 members. It is the sense of this committee that this branch should be subdivided into three parts as follows:

Dr. Tuteur:—The average attendance upon the meetings it was said by the chairman at the time, as I recall it, but which is not here in these minutes, was from 60 to 70, which I may say is in no sense strictly true.

"*South Side Branch* bounded on the south by Oakwood boulevard, on the east by Cottage Grove avenue, on the west by State street, and on the north by the river. This district comprises about 350 members.

Dr. Tuteur:—Note that it is stated to be comprised of 350 members. This entire branch was said to consist of 550 members.

"*Washington Park Branch,* bounded on the south by Seventy-first street, on the east by Cottage Grove avenue, on the west by State street, and on the north by Oakwood boulevard. This district has about 250 members.

Dr. Tuteur:—This makes 600 members.

"*Hyde Park branch,* bounded on the south by Seventy-fifth street, on the east by the lake, on the west by Cottage Grove avenue, and on the north by Oakwood boulevard. This branch has about 350 men.

Dr. Tuteur:—In other words, it is implied that there are 950 members in the South Side Medical Society.

"It is also the sense of the committee that the north boundary of the North Side branch should be brought down to Diversey boulevard, thus making this the dividing line between the North Side branch and the North Shore instead of Belmont avenue.

"Motion to adopt report seconded.

"Dr. Albro:—I amend that motion to receive the report and notify the branches affected as to the proposed recommendations of the committee.

Dr. Tuteur:—It would be only fair to state that although Dr. Albro made the motion to amend he nevertheless voted against it.

"Dr. J. C. Stubbs:—A time limit should be set for the branches to act, and they should be instructed to give a definite report at the next meeting of the Council. Heretofore, the Council has always changed the boundaries of the branches, and you are only delaying the matter by referring it to the branches.

"Dr. Tuteur:—This matter should be referred to the branches. I move an amendment that the secretary of the Chicago Medical Society at once inform the secretaries of the various organizations affected, that this matter may be brought to the attention of the societies for action at their next meeting, if possible. If not possible, then at the following meeting.

Dr. Tuteur:—Upon question as to the legality of the action regarding the division of the branches proposed by the Council, Dr. J. E. Stubbs of the North Side stated:

"Dr. Stubbs:—The by-laws provide that the Council has a right to change the boundary lines. That has been done heretofore on the recommendation of the Organization Committee.

Dr. Tuteur:—Having had no knowledge in this direction I did not know whether or not this was true.

"Further discussion by Drs. Tuteur, McGuire and Stubbs.

"Motion on amendment lost, by roll call.

"*Roll Call:*—Ayes—Favill, Weaver, Baum, Harris, Anthony, Preble, Balderston, Abt, Green, Langer, Paddock, Miller, Tuteur, Robbins, W. A. Pusey, Gillmore, Belfield, Kuh, Woodruff, Porter, Cotton (21). Nays—Noble, Bell, J. C. Stubbs, Lovewell, Albro, Senn, Fischkin, Culbertson, Whalen, Leigh, Hogan, Dawson, Moore, Nagel, Harvey, Scott, Pence, Betz, J. E. Stubbs, Lydston, Tansey and Van Derslice (22).

"Original motion carried."

Dr. Tuteur:—Defeated by one vote, as you will note. The misfortune was, or perhaps I might state the fortune was, that a number of our men—fully a half dozen who would have voted that the branch should not be so arbitrarily divided—had left, whereas all of the opposition men had remained. The original motion was carried. I will not take the time to comment upon that matter just now, but that there was some misunderstanding or misconception in regard to this action will be evident from this letter, which I shall read to you, from Dr. Hubart Lovewell, Councilor at Large, who called me up about 8 o'clock the next morning in regard to this action and to explain his vote upon it. (Applause.)

Dr. Lovewell was unable to get here to-night because of a previous engagement.

CHICAGO, Feb. 18, 1910.

Dr. E. B. Tuteur, Member of Council C. M. S., Room 809, 103 State Street:

My Dear Doctor:—A previous engagement renders it impossible for me to attend the meeting of the S. S. Branch this evening. I am very sorry for this for several reasons, first, because I wished to have the opportunity of expressing my profound regret for the part which I took at the last meeting in reference to the division of the S. S. district, and, secondly, because I shall be disappointed in not having an opportunity of assuring the members of the S. S. Branch of my very great interest in all things which pertain to their welfare.

As I have stated to you previously, my activity in the matter was the result of misunderstanding as to the source of the suggestion to divide the district. Dr. McGuire has long been an active, enthusiastic and congenial worker in the Englewood Branch and as chairman of the general organization committee of the Chicago Medical Society, was entitled to everything in my power to make his work easy and effective. Upon his representation that it was the desire of the members of the S. S. Branch to have the territory somewhat divided, I, as you know, endeavored to make his suggestion effective by the radical action taken.

In the past it has been customary in matters of like nature for the councilors of the adjoining branches to get together, and after due consideration report their deliberation to the chairman of the general organization committee and then and only then for the chairman of that committee to make a final recommendation to the Council. This evidently was not done in this instance and thus was irregular.

It is my intention, at the next meeting of the council to demand, if you think wise, a reconsideration of the vote adopting the motion which authorized a division of the district.

I shall be pleased to receive any suggestions from you or the members present to-night which will tend toward the autonomy and solidity of the present organization, in the S. S. District.

Trusting that the above may be presented to the meeting to-night and that it may be generally understood that we in Englewood are *with you* in this matter, I am,

Yours fraternally,

[Signed.] C. HUBART LOVEWELL, M.D.,
Councilor at Large.

I do not know that it is necessary for me to say much more in the matter. Since the occurrence of this calamity, as the president well styles it, and I believe it is a calamity, I have been very active in various directions. We were at the beginning, practically, of a successful future, and the evidence of that is here to-night—in the large attendance upon the meeting before which this matter was to come up; the attendance has largely increased; it has been many more than 60 or 70 on an average. I shall leave the further discussion of the matter to others. (Applause.)

Dr. Gillmore:—I was present at the February Council meeting when the action occurred that divided the Southern District in three parts, and it would be only right to the members of the Southern District to explain the manner in which this motion was proposed—the time it was made and the way it was carried. The business came up late in the evening, along towards 11 o'clock, after a great deal of uninteresting routine business had occurred, and after a number of the coun-

cilors had gone home. Also that there had been no notification to any officer or councilor of the Southern District that the division of the Southern District was to be considered; consequently when the report was read by Dr. McGuire, who is the chairman of the Organization Committee of the Chicago Medical Society, and appointed by Dr. Robison, the president of the Chicago Medical Society, we were all amazed. We did not know that there had been any question of division, or that any action had been taken by the Southern District. After a hurried conference of the councilors of the Southern District with the members present who resided in that district, we were unable to find any one who knew that there was any question of subdivision. The motion was carried dividing the Southern District into three divisions over the protest of Dr. Tuteur, who represented the Southern District in the Council.

This is the first time in the history of the Chicago Medical Society that the Council has arbitrarily divided a district. Formerly the organization committee has suggested that a new branch be formed from contiguous branches by mutual understanding with the officers and members of both of the branches affected, and by obtaining their cooperation and consent.

The reason of the formation of a new branch was that the meeting place was inaccessible and that some members of the Chicago Medical Society would be deprived of attending a branch meeting, and after this understanding the chairman of this organization committee would go into the Council and would ask that the boundaries be changed so that a new branch could be formed. Now there are one or two interesting things that we want to consider here in the event that we cannot rescind the action of the last Council meeting. In case the Southern District was divided and giving the number of members as five hundred and fifty (550) instead of nine hundred and fifty (950) as was given in the transcript of the minutes, it would make a total of seven (7) councilors to represent the three separate districts in the Council or two councilors each for two of the new districts and three councilors for the other. Now we have to recognize that this would be of some political significance, because a smaller branch could be manipulated easier than a large harmonious branch like the South District. We cannot avoid looking at that aspect of it. In view of the fact that this action has been taken absolutely without the consent of the officers or members of the Southern District, without any discussion of the subject, and without their knowledge, I take the liberty of presenting the following resolutions:

WHEREAS, the Council of the Chicago Medical Society at a regular meeting, held Feb 8, 1910, has divided the Southern District Medical Society into three (3) divisions, and

WHEREAS, This action establishes a grave precedent obnoxious and unjust to the branch societies, instituting autocratic relations by the Council of their intimate affairs, and

WHEREAS, The Southern District Medical Society had not been consulted in this matter or been advised that such a division was to be made at said Council meeting, and

WHEREAS, The Southern District Medical Society considers such a division as an extremely important act and one worthy of due deliberation and deep consideration by the members of said District. Therefore, be it

Resolved; That the Southern District Medical Society emphatically disapproves of the action taken by the Council of the Chicago Medical Society at its meeting held Feb. 8, 1910, whereby the Southern District Medical Society was divided into three (3) districts without giving the members of said District an opportunity to express their approval or disapproval of such an action and also let it be shown that the south side branch does not concur in the use of such tactics as those in evidence at the meeting of Feb. 8, 1910, whereby this action was made possible, but believes any important change involving a part or whole of the Chicago Medical Society should have due publicity before the final action causing such a change is taken, and that the Secretary of the Chicago Medical Society, as instructed in a resolution passed by the Council of the Chicago Medical Society, be requested to publish all matters pertaining to the welfare of the branches in the Bulletin of the Chicago Medical Society. Furthermore, let it be

Resolved: That the Councilors of this branch be and hereby are instructed to present this protest to the Council of the Chicago Medical Society at its next meeting and to urge the Council to rescind its action of Feb. 8, 1910, whereby the Southern District Medical Society was divided, and the Secretary of the Chicago Medical Society be instructed to publish these resolutions in the Bulletin of the Chicago Medical Society.

Dr. Cuthbertson:—Mr. President: It was with surprise and indignation that I learned of the high-handed action of the Council of the Chicago Medical Society in arbitrarily dividing the Southern District without the advice or consent of its

officers or members. The government of this society should be like that of the nation, "of the people, by the people and for the people," and we should insist on our rights in this matter in no uncertain tone. A house divided against itself will surely fall, and if the course that has been adopted is persisted in, I predict the early dissolution of the society. We are already objects of ridicule on account of our wrangles published in the daily press, and if our unseemly tactics are persisted in, we shall be the laughing stock of the community.

I have had the honor to be the first president of this society. I have carefully watched its growth in membership and influence, and I am free to say that we want no division of territory, nor anything else that will in any way impair the usefulness of this great and flourishing branch.

Judging from the report Dr. Tuteur has read to-night, if we go on in the same course that we have been pursuing, we shall soon degenerate into a lot of medico-political plug uglies. I move the adoption of the resolutions.

Dr. W. S. Harpole:—I second the motion for the adoption of these resolutions. The Southern District finds itself in the situation of Ancient Gaul, at the instance of Modern "Gall," divided into three parts. I would like to support the resolutions because they do not emphasize the importance of our particular situation so much as they lay emphasis on the violation of the principles that have heretofore obtained in branch matters in the Council. The thing that has been done by the Council in our case is to lay hands upon us and divide us without our consent, and this has provoked our indignation. Similar actions by legislative bodies have always borne such fruits, and I think we are more indignant at the way the thing was done than over the division itself.

I agree with the gentleman here that the general sentiment is for a united Southern District, which has been a successful and agreeable organization, and my own wishes are for the continuation of our branch with its old boundaries. I think we should, however, lay special emphasis upon the principle involved in this matter. Some of the remarks of the men who voted to carry this division, and some remarks on that occasion by our Councilor, Dr. Stubbs, as read to-night by Dr. Tuteur, were very autocratic, and I wish in supporting these resolutions, to resist particularly the manner in which this division was effected, and to let the branches of the city understand the position in which they find themselves—with so many of the councilors disposed to be high-handed.

President:—The motion before the house is on the adoption of these resolutions. Are there any further remarks?

Dr. McGuire:—I assume that I am a pretty bad looking man to this society. I was a little bit put out at what Dr. Tuteur did. I do not think he meant to do it. I think it must have been an oversight on his part. I resent the odium cast on my attitude in this matter. If Dr. Tuteur had told you that I had been instructed (as I had been) by the Council to act on and divide this branch, and that I tried to be fair and did not go on, and that I gave my word to Dr. Fuller, who will bear me out, and also to Dr. Tuteur, that I would not go on with this matter until they had an opportunity to put it before the branch, which I believe is perfectly right. My object in bringing the matter to the Council is not from any ulterior motive. It came from a suggestion from a member of your own branch who was your accredited representative. I simply made the suggestion. I supposed it would be referred back, and I was surprised that it was not referred back to your society.

Dr. Tuteur said (through some oversight on his part, or through a misunderstanding) that I said there were 250 men in number, and 350 members. If it was construed in that way I did not so intend it. What I said was, that there were 350 men in this district in what we intended to make the Hyde Park branch, and 350 in the South Side branch, and 250, approximately that number, in the Washington Park branch. I did not say "members" I said "men." I was perfectly conscientious in making my suggestion. I believe better work could be done, and more successfully. I did not mean to dictate to the South Side Society in any manner, whether they should be divided or not. I do not care, only for the welfare of all the society, and if it is your will that this should not be

divided, then I entirely bow to your will, and do not desire that anything should be said. I may be an appointee of Dr. Robison, as Dr. Gillmore has suggested, but I assure you that Dr. Robison made no suggestion to divide the South Side, or any other branch, outside of the South Side District. (Applause.)

Dr. Bevan:—Mr. President and Members of the Branch: I think we can all be very proud of the development of modern medicine in the last twenty-five years, the period during which most of us have been interested in it. Indeed, we are all proud of the development of modern medicine. The advancement has been very great and we can all feel that medicine is to-day a science, and that we belong to a very honorable profession. We have taken a splendid interest throughout the United States in the organization of the greatest medical society in the world, the American Medical Association. We are doing a magnificent work throughout the entire country by aid of this society in a great many lines, in education, in the splendid work of the committee on pharmacology, and in the medical journals that are being published by the National and State Associations. In all this work this branch is an integral part. We have a great many duties to perform in the future in the way of advancing medicine; in the way of advancing the important subject of public health in which we are probably the most important factor. I believe, as a whole, we are doing a splendid work, but we have very much yet to accomplish. We can only accomplish this by handling this great organization intelligently and honestly and decently, and in the way that it should be handled by scientific and professional men. We cannot do it if we allow this organization to degenerate into a political machine. (Applause.)

We have a great duty to perform and we intend to do that duty, and the way we can do it is to remember that we are a body of scientific men; that we owe a duty to the profession and to the public, and we must at this time show the entire profession of this country that the Chicago Medical Society has not degenerated into a lot of ward politicians, into a lot of Hinky Dinks and Bath House Johns and that we do not intend to have the Chicago Medical Society run like a ward political organization.

I, personally, detest medical politics. I think a majority of the men here will make the same statement (applause), and yet, if a gang of political doctors are going to organize and attempt to run the Chicago Medical Society and make it a farce and a disgrace before the entire country, then it is the duty of every man who believes in modern medicine as a scientist and who feels that he is an integral part of a great and splendid profession, to take off his coat and fight the devil with fire. (Applause.)

Now, gentlemen, I do not believe that sort of thing will be necessary. I think the gathering of the men here to-night show that it will not be. There is no use, Mr. President, of our taking any other view of the matter, except that we want to have this thing wiped out. We do not want to have this society controlled by a lot of politicians, and I desire therefore to second the motion in regard to these resolutions. (Applause.)

Dr. Lydston:—I voted on that question and I would like to ask Dr. Bevan if he means to insinuate that all of the men who voted on this question did so from ulterior motives, and to ask if their politics are not as good as his. Does he wish to be put on record as stating that their politics are corrupt?

Dr. Fuller:—Kindly address your remarks to the Chair.

Dr. Lydston:—I am asking a question in regard to his remarks, which I think it perfectly competent to ask. He has made a statement that I feel called upon to challenge, as I happen to be one of those who voted the other way.

Dr. Bevan:—Mr. President, I made myself very clear I think. I felt that this was done with a political motive—as a matter of medical politics to which I am opposed.

Dr. Lydston:—Granting that the gentleman's statements are true, which I do not, I would like to ask if this is the only instance in which medical politics have crept into the Council of the Chicago Medical Society? I will state frankly, so far as I am concerned, I gave the matter no thought. I still have the impression that the appointment of that committee was announced in the Council. I sup-

pose the appointment of that committee was regular and understood and its duties appreciated. I do not know that the committee had any ulterior motive whatever, if so I was not informed, and until the matter came up that evening I had no knowledge that the report of the committee was to be made that evening. I think it is disrespectful to the president of the society for any member to rise here to-night and impugn the motives of the Council even if he dislikes the report of the committee. I protest against that. So far as I am personally concerned, I did not give the matter serious consideration, if I had I do not know whether or not I should have voted as I did. I simply object to the tone of the discussion. I object to imputations upon the men who have the right to their opinions and whose votes are not necesarily any more partisan than those of the opposition. I do not think Dr. Bevan meant some of the things he has said. So far as my personal feelings are concerned I should not care to be redistricted.

President:—Before this matter is put to vote, I think it is only right to hear from other gentlemen whose presence I note. I will call upon the president of the Chicago Medical Society.

Dr. John A. Robison:—Mr. President and Members of this Society: I am very glad to be present at this meeting and hear it discussed. Personally I am with you unofficially. I wish to say that I do not believe that any of the members of this Council—few members of the Council knew that the proposition to divide this district was to be passed the night of the meeting. I knew nothing about it whatever until Dr. McGuire came to me just before the meeting was called to order and told me that the Organization Committee intended to bring it before the Council. I desire to set right one point referred to by Dr. Tuteur, I think, or Dr. Gillmore, in regard to the lateness of the hour at which the proposition arose. The impression I think that they have conveyed was that it was purposely brought forward late in the evening and passed. The reason it was passed was given at the time. This proposition came up in the regular course of business. There is a regular order of procedure and that order of business was interrupted during the evening. Quite a number of the councilors arose and spoke on other matters. If I had wished to rule, as it was my right to do, I could have ruled that they were interrupting the regular order of business without the consent of the Council. However, I have tried to be impartial. I have tried to conduct the duties of the office of president without fear or favor. I told the North Side branch the other night that I knew nothing about politics in the Chicago Medical Society. (I see you are not inclined to believe me.)

Second, I wish to correct the impression that this came up late in the evening on purpose. I believe where you ought to make a change in the constitution is in that clause where it delegates to the Council the power to subdivide these districts. I think you are doing the society a wrong in that instance. I do not believe that particular part of the Constitution and By-Laws was carefully gone over and considered at that time. It was probably never thought that such a dilemma as this would occur, and in passing these resolutions to-night you ought to couple with it a suggestion on the Constitution and By-Laws to so change that part of the Constitution and By-Laws that any proposed subdivision or subtraction from one district or addition to another should be referred first to the districts which are affected. Now, personally, I would be just as much opposed as any member of the South Side branch—I am now a member of the North Shore branch—if the Council should attempt to divide the North Shore branch and take part away and give it to another branch. I do not believe it would be treating the North Shore branch right.

I wish to state another fact, and it is this, I dislike very much to see any division in the ranks among the Chicago Medical Society. If I remember correctly the night of the first meeting I said that it was my hope that the affairs of the Chicago Medical Society should be so conducted that the greatest good should come to the greatest number of the members of the Chicago Medical Society. On the other hand, I speak in favor of harmony, and I reiterate that it is my wish and my hope and my desire that everything that is done in the Chicago Medical Society Council or in the branches shall be done with an eye single

to the glory and development of the medical profession and the Chicago Medical Society in particular, and I believe if we conserve our entire efforts particularly to improve the scientific work of the society we shall be doing the greatest good to the greatest number. (Applause.)

Dr. Tuteur:—Mr. President: I want to set myself right, and to set Dr. McGuire right, in reference to the matter of saying "men." I have here in the transcript "members." I did not mean to say anything that was not in the minutes and this was copied from the minutes on file in the secretary's office and says distinctly "members" and not "men." I did not wish to misrepresent that matter.

In the second place, I want to say a word in regard to Dr. McGuire and do him justice. It is perfectly true that I spoke to him the next morning after this happened. He said he regretted this matter exceedingly. That he was informed it was the wish of this branch that it be divided, and that he was informed, so he stated officially, that that was the case. It is not for me to say as to the truth of the matter, but I want simply to set him right. He went further and said he himself would be willing to bring this matter up at the next meeting of the Council and present a motion to rescind the action or vote for its rescinding. I want to do Dr. McGuire justice and state the matter accurately. (Applause.)

Dr. Robison:—Did I understand that these resolutions imply a censure on the secretary for not publishing the motion?

President:—Not as I understand it, Dr. Robison.

Dr. Grulee:—I believe a little explanation on my part is necessary. This matter has come up and, personally, I was in favor of dividing the South Side branch. Dr. McGuire understood that this matter would be referred back to the South Side branch before action was taken. There was a misunderstanding in that respect, and I feel it but justice to myself that you should understand that we both understood from the start that this should be referred back to the branch and no action of any sort on the part of the Extension Committee to divide this branch should be made without the sanction of the branch.

The resolutions were unanimously adopted.

Dr. Eisendrath:—In view of the experiences we have had this evening I move that the following instruction be addressed to our secretary: That article four, section one of the Constitution and By-Laws of the Chicago Medical Society, which now reads, "The county of Cook, including the city of Chicago, shall be subdivided into districts, the number and boundaries of which shall be determined by the Council, and the same may be increased or decreased in number, or changed in size, at any time, as may be deemed best by the Council; provided, that all Councilors and branch officers elected for a given subdivision shall hold office until the end of the term for which they are elected," be so amended that it reads as the above with this addition: "And furthermore provided, that the branch to be changed shall be first consulted before any action is taken by the Council and that due notice shall be given the branch of any proposed action by two weeks' previous publication in the *Bulletin of the Chicago Medical Society*, and furthermore that such a change shall only be made possible by obtaining the consent of the branch affected, which consent is to be obtained by a majority of votes taken at a regular meeting of the branch.

Motion carried unanimously.

JEFFERSON COUNTY.

At the December meeting of the Jefferson County Medical Society it was decided to take advantage of the lecture bureau offered by the state society and the secretary was instructed to secure a lecturer according to the plan laid down by the judicial council. In response to this invitation Dr. Carl E. Black of Jacksonville volunteered his services and delivered his lecture, "Lacerations of the Perineum and the Various Methods for Their Repair," at the regular meeting of the Jefferson sounty society, Thursday, January 27.

Dr. Black arrived just before noon and was escorted to Hicks' Café, where he was welcomed by twenty of the membership, and with them enjoyed a splendid

dinner. After dinner the society adjourned to the Opera House instead of the regular meeting place, in order to take advantage of the stereopticon views which formed part of the lecture. The meeting was called to order by the president, Dr. Whitlock. The following members were present: Drs. Daggett, Belle Rive; Clark, Dix; T. B. Williamson and W. N. Hamilton, Opdyke; Parker, Texico; and Frost, Morgan, Suttle, Swift, Culli, Whitlock, Andy Hall, Chas. Hall, J. W. Hamilton, Smith, Mitchell, Tupper, Gee, Levick, Maxey, Ward, Poole and Gilmore, Mount Vernon. Dr. I. G. Gee, formerly in practice in this county, and Dr. Ed Alvis, Kell, visited the society. This is the largest attendance of members known to the society. The meeting was confined strictly to the membership and twenty-three out of thirty-one were present. Dr. Black was introduced by the chair. Dr. Black showed the various forms of lacerations that might occur during labor and how each of them should be repaired at once. He insisted that this operation should never come to the regular surgeon but should be made by the family physician at the earliest possible time after delivery. The lecture was discussed by Drs. Whitlock, J. W. Hamilton, Andy Hall and Mitchell and closed by Dr. Black.

It was then moved by Dr. Hamilton and seconded by Dr. Morgan, that a vote of thanks be extended Dr. Black for his long trip to our city and his splendid address. Motion carried unanimously. The Jefferson county society has adopted the plan of having a dinner for the members of the society every three months, and it has been of great benefit in getting the members "together." Hereafter the State Society will be requested to send a lecturer to each of these meetings, as Dr. Black's address was of great value to all present.

"The Etiology of Headache," by Dr. Tupper of Mt. Vernon, was the next paper. Dr. Tupper's paper was not discussed, however, as the afternoon was almost gone. On motion the society adjourned to meet February 25.

W. H. Gilmore, Secretary.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society met in Hotel Parlors at Warren, Jan. 20, 1910. Dr. Kreider presided with the following members present: Drs. Stafford, Smith, I. C. Keller, Renwick, Smith, O. G. Miller, Nadig, Kolb, Hillord, Melhop, Hancock and Czibulka. Dr. M. J. Moes of Dubuque was elected to membership. The auditing committee examined the books of the secretary and treasurer and reported all correct, with $28.07 in the treasury. The same committee revised the list for the four entertaining divisions, namely: Galena Division, Drs. Godfrey, Gunn, Bench, Smith, W. A. Weirich and Miller; Elizabeth Division, Drs. Smith, D. G. Nadig, Cottral, Boots and Tyrrell; Warren Division, Drs. Keller, Czibulka, Bucknam, Renwick and Hillord; Stockton Division, Drs. Kreider, Smith, I. C. Stafford, Kaa, Lewis and Cottingham. The following officers were elected for the ensuing year: President, Dr. S. G. Kreider; vice-president, Dr. U. S. G. Keller; secretary-treasurer, Dr. D. G. Smith; censors, Drs. Melhop, Renwick and Kolb; delegate, Dr. A. C. Czibulka; alternate, Dr. A. T. Nadig.

The scientific program was opened by the annual address by Dr. S. G. Kreider. Dr. A. T. Nadig read a paper on "Stomach Ache." Dr. W. H. Miller reported a case of "Seminal Vesiculitis Treated by Vasectomy." Dr. Hancock read a paper on "The Place and Value of the Splint in Minor Surgery," and Dr. D. G. Smith read a paper on "Dyspepsia, and What Does it Mean?" These papers were all well prepared and imparted some valuable hints along their special lines. The absent members missed the most. Elizabeth was selected as the next place of meeting.

D. G. Smith, Secretary.

LAKE COUNTY.

The regular meeting of the Lake County Medical Society was held at the Deerpath Inn, Lake Forest, Jan. 10, 1910, Dr. J. L. Taylor presiding. Secretary's report was read and approved. The president announced the appointment of a

new board of censors consisting of Drs. Tombaugh, Gourley and Bellows for the current year. Dr. John A. Turner of Waukegan was elected a member of the society. A paper prepared by Dr. Margaret Grant on the subject of "Rare Oriental Diseases," was read by Dr. W. C. Bouton in the absence of Dr. Grant. Dr. William E. Schroeder of Chicago then gave us a most excellent treat by lecture and stereopticon views bringing out the importance of color photography for teaching purposes. This paper was thoroughly enjoyed by every member of the society as well as the other visitors present. A special vote of thanks was given Dr. Schroeder for his most excellent demonstrations. Just before adjourning the president appointed the following committee for special entertainment for the meeting to be held in June: Drs. Tombaugh, Foley, Bergen, Kalowsky and Galloway. Those present were: Drs. Bellows, Taylor, Galloway, Churchill, Holm, Gourley, Kalowsky, Bouton, Turner, Jolly, Hageman, A. O. Wright, Elva Wright, Haven, Parmenter, Fuller Withers, Tombaugh, Bergen, Ingalls, Proxmire and Watterson, besides several nurses of the hospitals of Lake Forest and Waukegan.

W. H. WATTERSON, Secretary.

M'LEAN COUNTY.

The January meeting of the McLean County Medical Society was held Thursday, January 6, at the City Hall in Bloomington, Dr. E. Mammen, president, presiding. The principal business was the report of the Judiciary Committee, through Dr. Godfrey, that a certain well known citizen was constantly violating the medical practice act, and that recently he had brought suit to collect a bill, under the cover of services rendered as a laborer. The medicine was applied by friction. He obtained judgment in his favor in the County Court, but defendant had taken appeal. The Judiciary Committee was instructed to go ahead and secure conviction for fraud and violation of law. Dr. Hawks read the paper of the evening, an abstract of which follows:

THE TREATMENT OF COMPOUND FRACTURES.

We find some of the writers on this subject divide these injuries into those due to indirect and those due to direct violence, and consider that the former are less apt to suffer infection. It seems reasonable, however, to consider all compound fractures as infected, as I believe the vast majority of them are. It is infection we have to deal with primarily, and the traumatism to the bones is a secondary consideration. Very frequently we have compound fractures sent into the hospital with the bony deformities very skilfully reduced, but which very promptly develop inflammation of such a character as to prove that infective material was introduced incidental to the traumatism, and had not been removed by the attending surgeon who reduced the fracture.

Prof. Martin B. Tinker of Cornell recently read a paper before the New York Medical Society in which he advocated some new procedures in the handling of these cases. Instead of scrubbing wounds and then irrigating with antiseptic solution he advocates: 1. Packing the wound with tampons of cotton or gauze saturated with sterile oil. 2. Scrubbing the surrounding skin thoroughly, claiming that the oil tampon will prevent entrance of infection into the wound. 3. Removing the tampons after the scrubbing, and removing the oil by means of ether or benzine swabs and finally swabbing the lacerated tissues with some strong germicide. 4. He cuts away all tissues damaged by the injury or the strong antiseptics. He uses a tourniquet when the fracture is of an extremity, as a bloodless field makes thorough work possible. 5. He closes the wounds by sutures, claiming that if the work is thoroughly done there will be little or no infection. He does not irrigate or scrub the injured tissues, claiming that irrigation carries in as much infective material as it washes out and that scrubbing and antiseptic irrigating fluids destroy injured tissues which otherwise might live. More extensive injuries such as ordinarily require amputation or those in which there is an element of doubt he treats in the same way and awaits the formation of the line of demarcation before operating.

This treatment in some respects is a radical departure from our established and traditional methods. It would be good treatment provided one was absolutely sure that he had removed all sources of infection and had prevented all bloody or serous oozing, but in 999 cases out of 1,000 one could not be sure. His use of the oil tampons, however, seems a rational idea and worthy of trial. It seems to me, however, that the safest way to secure good results is to provide plenty of drainage. In my own somewhat limited experience those cases have done best in which, somewhat, the following method has been followed: 1. Protect the wound tissues by packs of gauze. 2. Shave and thoroughly scrub the skin with soap and brush, followed by the use of alcohol, ether and bichlorid as in any aseptic operation. 3. Incise the parts freely and remove all shreds, blood clots, foreign bodies and devitalized tissues, so that sloughing may be reduced to a minimum and there may be no fragments of tissue to get between the ends of the fractured bones and prevent union. 4. Irrigate thoroughly with normal salt solution of a temperature of 110 Fahrenheit. 5. Stop all hemorrhage, if possible. 6. And last, but by no means least, secure drainage and gravity drainage at that, making new incisions through the soft parts to the most dependent if necessary. Drain by tube, cigarette or iodoform gauze as seems best suited to the individual cavity, but drain by all means.

To irrigate or not to irrigate, that is the question. It is pretty generally accepted that irrigation of the abdominal cavity is bad surgery, and too much irrigation is a bad thing anywhere. But in injuries of this sort irrigation with hot saline solution in connection with adequate drainage not only cleanses the infected tissues but washes out shreds and blood clots and by its stimulating action on injured tissues hastens recovery.

As to the treatment of the bones themselves, coaptation of fragments is the best treatment in most cases, in the hands of the most of us. Nails, screws and wires are useful if there is a failure to effect union or if it is impossible to hold fragments in place as in an oblique fracture of the tibia. In the hands of such a surgeon as Mr. Arbuthnot Lane, the use of mechanical devices to unite fractures is very successful, but most of us do not possess his skill and experience. He is an extremist as is shown by his ideas on the treatment of the colon in constipation, and he treats all fractures as compound, indeed making simple fractures such, in order to use his specially designed plates to unite the fragments. He does all his manipulations by means of instruments and does not touch the tissues with his hands at all.

As to the dressing of these injuries, splints made from plaster of Paris and moulded to each individual case serve the purpose much better than the ready-made splints of various material. In cases where it is impossible to secure sufficient rigidity and accessibility at the same time by use of plaster, it is well to call a good tinsmith in consultation and by use of galvanized iron plates and malleable iron strips make a splint which will hold the parts where you want them and at the same time give free access for dressings..

The *x*-ray is a valuable adjunct but not an infallible guide in the treatment of fractures. I have heard it said that in one of the city hospitals it is the custom to take skiagraphs of fractures after reduction and submit them to the patient or his friends, with the statement that if not satisfactory the surgeon will be pleased to cut down on the fracture and unite by wiring or otherwise. The *x*-ray is often deceptive and many a functionally perfect result looks rather badly if skiagraphed at on improper angle.

The use of antitetanic serum as a prophylactic measure is worthy of consideration and is advocated by some and indeed practiced as a routine procedure. There was a general and profitable discussion participated in by nearly all present. Adjourned.

At the February meeting, on the 3d, Dr. J. L. Wiggins will read a paper entitled "Some of the Difficulties in Differentiating Between Surgical and Non-surgical Cases."

OGLE COUNTY.

The Ogle County Medical Society met Jan. 26, 1910, in the lecture room of the Public Library, Polo, Ill. Called to order at 2 p. m. by President J. M. Beveridge.

The following were present: Drs. Maxwell, Krebs, Powell, Houston and Judson of Polo, Beveridge, Alrutz and Sheets of Oregon, Brigham of Brookville, McPherson of Hazelhurst, and Murphy and LeSage of Dixon. Dr. V. H. Podstata of Elgin presented a paper on "Early Symptoms of Insanity and When Home Treatment is Advisable." After discussion Dr. A. C. Croftan of Chicago gave a very instructive talk on "Medical Diseases of the Kidneys, with Special Reference to Differential Diagnosis and Treatment." After discussion a communication from the secretary of the American Medical Association and a letter from C. A. L. Reed were read concerning the advisability of holding open meetings for consideration of timely medical topics of general interest.

On motion of Dr. Krebs the next meeting will be an open meeting and devoted to the subject, "Tuberculosis." The meeting adjourned to meet the third Wednesday in April at Oregon.

The secretary being absent, Dr. H. Sheets was appointed secretary pro. tem

H. Sheets, Sec. Pro. Tem

PULASKI COUNTY.

The first annual meeting of the Pulaski County Medical Society was held at Mound City, Wednesday, Jan. 5, 1910. The meeting was called to order at 10 a. m., with the president, Dr. Hall Whiteaker, in the chair. After reading and disposing of the minutes of the last meeting the regular order of business was taken up. The first thing on the program was regular annual address of the president, which was properly and promptly delivered. The subject, "Why I am a Member of a Medical Society," was handled in the Doctor's usual vigorous and convincing manner, and when he sat down not one present could offer an excuse against being a member. In fact, no one wanted to, because Pulaski county doctors are finding out the value of being a member and they are too progressive to stay out of the fold. The following officers were then elected: President, Dr. L. F. Robinson of Ullin; vice-president, Dr. B. A. Royall of Villa Ridge; secretary-treasurer, Dr. M. L. Winstead of Wetaug (reelected for third term) and also chosen as delegate to the next state meeting.

Dr. S. T. Seaya, a native of Barbadoes and a graduate of Meharry Medical College, Nashville, Tenn., had an application in for membership and was favorably reported on by the board of censors and was admitted. He will practice in Mounds. Adjournment was then made for dinner, after which the scientific portion of the program was taken up. The first paper on "Pneumonia, Its Etiology, Diagnosis and Treatment," was discussed first by Dr. C. J. Boswell of Mounds and afterward by most all present with some divergent views on the treatment, but in the main the views of all were about the same. The next paper on "Can Cancer be Cured, and if so, How?" elicited quite a lot of discussion. Dr. J. B. Mathis of Mound City, a specialist in its treatment, contended that all cancers were curable in the incipient stage. Dr. Hall Whiteaker said they were not. Several present claimed to have cured at an early stage what to all appearances were cancers. The rest of the evening was taken up in discussion of this subject and papers on "Tuberculosis" were laid over until the next meeting. This meeting was one of the most interesting and instructive that the society has held. There was a good social and fraternal spirit manifest and the pulse of the society beat strong and the indications for robust health the coming year are very flattering. The profession generally throughout the county is in a prosperous condition.

M. L. Winstead, Secretary.

ST. CLAIR COUNTY.

The annual meeting of the St. Clair County Medical Society was held at Priestus Park, January 6, Dr. W. S. Wyatt, president, in the chair. The minutes of the preceding meeting were read and approved. The following officers were

elected for the ensuing year: President, Dr. Geo. C. Hilgard, Belleville; vice-president, Dr. Chas. S. Skaggs, East St. Louis; treasurer, Dr. Adolph Hausing, Belleville; secretary, Dr. Edward H. Lane, French Village; delegate to state convention, Dr. W. S. Wyatt; alternate, Dr. J. W. Twitchell.

A very interesting and instructive paper on "Typhoid Infection of Seminal Vesical, Vas and Prostate Gland," with illustrations by stereopticon views was given by Dr. Marshallton of St. Louis, Mo. This paper was discussed by practically every member present, following which Dr. Marshallton closed the discussion. A vote of thanks was extended to Dr. Marshallton for his very excellent paper, after which the society adjourned to meet February 3.

E. H. LANE, Secretary.

The regular monthly meeting of the St. Clair County Medical Society was held at Preistus Park, February 3, with President W. S. Wyatt in the chair. Previous to opening Dr. Lillie presented a clinical case to the society for examination and advice. After the regular order of business had been disposed of the society had the pleasure of listening to an exceedingly interesting and instructive paper by Dr. Hugo Ehrenfest of St. Louis on "Pregnancy in Its Relation to Disease." The subject was handled in a masterly manner and all present expressed the opinion that the time was well spent in listening to such a paper. The discussions by Drs. Auten, Zimmerman, Skaggs, Lane, Starkle, Adams and Lillie, with closing remarks by Dr. Ehrenfest, were listened to with closest attention by all present. After light refreshments the society adjourned to meet again March 3, when Dr. V. P. Blair of St. Louis will read a paper on "Hare-Lip."

E. H. LANE, Secretary.

SANGAMON COUNTY.

The regular meeting of the Sangamon County Medical Society was held at the Lincoln Library, Springfield, Monday evening, Feb. 4, 1910, at 8:15, with a full attendance. It was an evening in clinical pathology, and the following were presented together with some exceedingly interesting specimens: "Toxemia of Pregnancy, with Report of Case," by Dr. L. C. Taylor; "Thyroid," by Dr. E. E. Hagler; "Ectopic Pregnancy, with Twisted Pedicle," "Sarcoma of Ovary," by Dr. Chas. L. Patton; "Multilocular Hydatidiform Cyst," Dr. A. C. James; "Gastric Ulcer, Followed by Dilatation of the Stomach and Complete Occlusion of the Pyloris," by Dr. W. A. Young; "Hypernephroma," by Dr. Don W. Deal; "Secondary Contracted Kidney, with Stone," "Enterolith, Causing Intestinal Obstruction," "Ruptured Heart," by Dr. D. M. Ottis. T. H. D. GRIFFITHS, Secretary.

VERMILION COUNTY.

The Vermilion County Medical Society met Dec. 13, 1909, with Dr. Stephen C. Glidden in the chair, Dr. George Steely acting as secretary. Minutes of previous meeting were read and approved. The following program was rendered: A paper by Dr. A. Merrill Miller, Danville, on "Recognition of Extrauterine Pregnancy," which was very ably presented. Dr. Lester E. Frankenthal, Chicago, read a very practical and valuable paper on "Fibroid Tumors." Dr. A. Merrill Miller's paper was discussed by Drs. Hatfield, Glidden and Morehouse.

Next in order was election of officers, as follows: President, Dr. Benjamin Gleeson, Danville; vice-president, Dr. F. M. Mason, Rossville; secretary and treasurer, Dr. Solomon Jones, Danville; censors, Dr. Williamson, Danville, and Dr. A. J. Clay, Hoopeston.

At this point the society took a recess and repaired to "The Dairy Lunch Rooms," where the members and visitors enjoyed a substantial lunch. After luncheon the name of Dr. A. O. Strout was voted upon to determine if he could become a member of the Vermilion County Medical Society. The number of votes

cast was twenty-six, all in favor of the candidate. Drs. A. E. Dale and Herschel Baldwin acted as tellers. Dr. Fred A. Baumgart's application for membership was read and turned over to the censors. Dr. George Steely read his annual report. Dr. H. F. Becker moved and it was seconded that Dr. Steely's report be accepted. The motion was carried.

Dr. Stephen C. Glidden moved and it was seconded that Dr. Steely be given a vote of thanks for the year's work; same was carried and thanks extended. The "J. H. Campbell episode" relative to the use of his name before the public to further the use of a quack remedy was well aired before the society. The correspondence relative to the said J. H. Campbell using the names of the officers of the society to enable him to pass the Indiana State Board of Health, admitting him to practice his art in that state, was read. It was finally moved, seconded and carried that all literature pertaining to this matter be given over to the board of censors to dispose of definitely. It was moved, seconded and carried that the contents of the pamphlet accompanying letters be perused by the board of censors. A vote of thanks was extended to Dr. Frankenthal by the society. A motion to adjourn was carried at 11:50 p. m. Thirty-seven members and guests were present. Dr. Solomon Jones, Secretary.

Regular Meeting, Jan. 10, 1910.

The Vermilion County Medical Society was called to order at 8:30 p. m., Jan. 10, 1910, by the president, Dr. Benjamin Gleeson. The minutes of the previous meeting were read and approved. The "J. H. Campbell matter" was again taken up to be dropped from any further attention by the Vermilion County Medical Society. Dr. Fred A. Baumgart was declared elected to membership. The names of Drs. A. L. Brobeck of Hoopeston and J. H. Williamson of Georgetown were proposed as candidates for membership. The program consisted in a symposium on pleurisy. The following papers were read: "Anatomy and Physiology," by Dr. Herschel Baldwin, Sidell; "Etiology, Pathology and Symptomatology," by Dr. A. J. Clay of Hoopeston; "Treatment, Medical and Surgical," by Dr. J. M. Guy, Danville. The papers created a general discussion in which many helpful suggestions and interesting phases of the subjects were brought out. The discussion was opened by Dr. W. H. Morehouse, followed by Dr. T. E. Walton.

Ignoring the fact that it had been moved, seconded and carried unanimously that the "J. H. Campbell entanglement" be dropped, Dr. T. E. Walton moved and it was seconded that Drs. Stephen C. Glidden and George Steely be endorsed by the Vermilion County Medical Society in the attitude that they had taken in the "J. H. Campbell affair." It was then moved by Dr. J. M. Guy and seconded by Dr. A. E. Dale to table Dr. Walton's motion. It was carried. A motion was now made to adjourn. Same carried. Thirty members and Dr. Bird, Soldiers' Home, a guest, were present. Dr. S. Jones, Secretary.

Regular Meeting, Feb. 14, 1910.

The Vermilion County Medical Society met Feb. 14, 1910. Minutes of previous meeting were read and approved. Application of Dr. J. H. Williamson read. A question arose as to whether or not Dr. Bird could be a member of the Vermilion County Medical Society and at the same time not be registered in the state. It was decided to let this matter rest until later. A bill was read from William Anker, florist, for two floral designs for the funerals of Dr. Poll and Dr. Nebeker.

Program: Symposium on pneumonia. A paper on "Lobar Pneumonia," by Dr. C. E. Brown, Hoopeston. The paper was full of valuable thought, bringing it down to date. Treatment was shown to run along prophylactic lines, laying great stress on fresh air as an important factor in the treatment. "Broncho Pneumonia," by J. B. Morton, Ridge Farm. Very exhaustive, saying it is self-limited disease. Discussion of Dr. Brown's paper was opened by Dr. Cloyd, who agreed with the author in all except the location in lung of most frequent infection. The author gave the right lower lobe; Dr. Cloyd, the middle of right lung; Dr. Fisher emphasized sweating patient during first few days, giving exit to poisons, thus

producing rest and reducing temperature. Dr. Hatfield called attention to second sound of heart, admonishing the profession to keep close watch on the heart; advocated the use of salicylic acid in pneumonia. He thinks degenerative nephritis is more frequent in pneumonia than is supposed. Dr. F. N. Cloyd believes in vigorous treatment in the beginning; believes in aborting most cases in first thirty-six to forty-eight hours, by 5 grains of guaiacol every four hours. Remember crisis and leave (crisis) stimulant; he combats depression with brandy. Dr. T. E. Walton believes most patients die of profound sepsis at crisis; he would use oxygen. Dr. Steely brought to the mind of the gentlemen the idea of strophanthus being now a very popular heart stimulant.

In the absence of Drs. Becker and Landauer, Dr. J. M. Guy was asked to lead the discussion of Dr. J. B. Morton's paper, in part, saying the intensity of the disease is indicated by the degree of fever. It usually runs its course in fourteen days. His experience is that they are less fatal than lobar pneumonia. He further says there is no hard and fast rule to lay down in treatment. Every case indicates its own treatment. Jaborandi is given for expectorant effect. Hydriodic acid is used as a resolvent. He disagrees with the author laying antipyretics on the shelf, but does use them to much advantage. Dr. S. C. Glidden takes issue with author in exposing patient to weather for five or six hours each day, but advocates much oxygen. Says jaborandi is too depressant to be used, advocates quinin. Dr. Walton believes in giving cow's milk, predigested, but does not expose patient to weather, yet should give patient much fresh air; advocates 10 grain doses of quinin in five-year-old child. Gives gentian and chlorid of iron with essence of peppermint during convalescence. Mortality 40 to 60 per cent. in his cases. Dr. F. N. Cloyd says his cases recover in three to five days. Advocates coal tar products. Mortality is placed by him at 10 per cent. Advocates guaiacol in all cases of lobar pneumonia, but not in bronchopneumonia. Dr. Morton closed discussion. Secretary is sorry to leave out the closing discussion, also many other remarks which could not be taken down. Motion to adjourn was made and carried. Twenty members and Dr. Fletcher, a guest, were present.

SOLOMON JONES, Secretary.

WINNEBAGO COUNTY.

The Winnebago County Medical Society met in regular session in the Hotel Nelson, at Rockford, Tuesday, Dec. 14, 1909, with the president, Dr. Frank H. Kimball, in the chair. The minutes of the last meeting were read by the secretary and approved. The censors reported favorably on the applications for membership of Dr. Chas. E. Wright, graduate P. and S., Chicago, 1901, licensed 1901; Dr. Horace B. Dunn, graduate Bennett Medical, Chicago, 1906, licensed 1906; Dr. Sidney C. Niles, graduate N. W. U. Medical School, Chicago, 1907, licensed 1907; Dr. Henry N. Barth, graduate N. W. U. Medical School, Chicago, 1909, licensed 1909. The following named physicians presented their applications for membership in this society: Drs. R. B. Andrews, H. E. Delevergue, G. N. Hawley, R. W. McInnes and A. J. Marhley, all of Belvidere, and G. W. Manning of Garden Prairie. The applications were referred to the censors. The president introduced Dr. Frank X. Walls of Chicago, who gave an interesting and instructive lecture on "The Disorders of Nutrition in Childhood." The society gave Dr. Walls a vote of thanks for his presence and services and hoped to hear him again at some future date. The members present were: Drs. Atchison, Barth, Bourland, Catlin, Day, Dunn, Eahin, Farrell, Franklin, Gill, Goembel, Green, A. S. Green, Jno. Haines, Hanford, Hatch, Haughey, Hill, Hunt, Ives, Keith, Kimball, Kinley, Klontz, Lofgren, Markley, Miller, Park, Paul, Rogers, Starbey, Tuite, Vanderhoof, Walker, Weld, E. H. Weld, Anna, Weirich, Woodard and Wright.

Adjourned.

The Winnebago County Medical Society met in annual session Tuesday, Jan. 11, 1910, at 8 p. m., at the Nelson House Ordinary, Rockford, Ill., with President Frank H. Kimball in the chair. On calling the roll the following members were

present: Drs. Allaben, Andrews, Atchinson, Barth, Bourland, Catlin, Clark, Cochran, Crawford, Culhane, Day, Dunne, Eakin, Farrell, Fitch, Fringer, Gill, Goembel, A. S. Green, Jno. A. Green, Haines, Hanford, Hatch, Helm, Hill, Hostetter, Howard, W. S. Howell, Sally Howell, Hunt, Ives, James, Keith, Kimball, Kinley, Klontz, Lichty, Lofgren, Maas, Markley, Miller, Nash, Niles, Nyman, Park, Penniman, Ransom, Richings, Rogers, Rohr, Sager, Scott, Starkey, Tibbetts, Tuite, Vanderhoof, Walker, Anna Weld, E. H. Weld, Weirich, Chas. E. Winn and Wright. The minutes of the last meeting were read and approved. The censors, Drs. Helm, Howell and Franklin, reported favorably on the application of the following for membership in the society and they were elected to membership: Drs. R. B. Andrews, H. E. Delavergne, G. W. Hawley, R. W. McInnes; A. J. Markley, Belvidere; and Dr. G. W. Manning, Garden Prairie.

Dr. C. A. Walker read a paper on "The Disorders of Infancy." Discussion by Drs. Fitch, Allaben, Crawford, Eakin, Miller and Kimball. Under the head of miscellaneous business Dr. W. H. Fitch stated that owing to the increased cost of living physicians in various sections of the East and West were enjoying an increase of charges over the present fee bill of the local society for similar services and moved that a committee be appointed to investigate and report upon increasing some of the prices in the local fee bill. The president appointed Drs. Fitch, Eakin and Culhane relative to increasing prices in the fee bill.

The secretary's and treasurer's report for the year ending December 31, 1909, was read and accepted. Secretary's report for the year ending Dec. 31, 1909. The Winnebago County Medical Society was organized at Rockford, Ill., Oct. 18, 1881; chartered Jan. 26, 1903; number of meetings held annually, eight; place held, Rockford; dates held, January 12, February 9, April 13, May 11, September 14, October 12, November 9, December 14, 1909. Average attendance, twenty-five. Date of annual election, Jan. 12, 1909: President, Frank H. Kimball; vice-president, W. Grant Hatch, Rockford; secretary-treasurer, Frank W. Hanford, Rockford; delegate, E. H. Weld, Rockford; alternate, P. L. Markley, Rockford; censors, W. H. Helm, W. S. Howell and W. R. Franklin. Number gained, thirteen. Drs. Barth, Cochran, Tarrell, Gill, Goembell, James, Maas, Niles and Wright, by application; Dr. Horace B. Dunne, transferred from Bureau County Medical Society; Drs. C. V. Nyman, Chas. E. and Geo. L. Winn, by reinstatement. Treasurer reported total receipts for the year was $419.39. Disbursements (including secretary's honorarium) were $226.23, leaving a balance of $193.16 in the treasury. The next in order was the election of officers for the ensuing year. Drs. Eakin and Hostetter were appointed tellers. The following were chosen: President, W. Grant Hatch, Rockford; vice-president, Geo. H. Haines, Durand; secretary-treasurer, Frank W. Hanford, Rockford; censor for three years, D. Penniman, Argyle; delegate and medicolegal representative to be elected later. The retiring president, Frank M. Kimball, in reviewing the work of the year, expressed his appreciation of the hearty cooperation of each member in promoting the best interests of the society. By a unanimous vote of the society the secretary was instructed to send the best wishes and a bunch of roses to the sick members of this society, Dr. R. G. W. Kinder, Rockford, convalescing from typhoid fever, and Dr. I. O. Paul, Winnebago, in Rockford Hospital, recovering from a fracture of the left femur. A smoker was enjoyed during the evening.

Adjourned. FRANK W. HANFORD, Secretary-Treasurer.

NEWS OF THE STATE

PERSONAL.

Dr. Edgar P. Cook, Mendota, started for Europe, February 7.

Dr. John F. Page, Eureka, returned from Europe January 21.

Dr. Hugh K. Schussler, Chicago, sailed for Europe, January 20.

Dr. J. S. Alexander, Waverly, fell on the ice January 18, breaking his right hip.

Dr. and Mrs. Ralph E. Starkweather, Chicago, sailed for Europe February 5.

Dr. Edwin W. Knowles, formerly of South Chicago, has located at Gladstone, Mich.

Dr. P. S. Wiedman, Edwardsville, fell January 20 and sustained severe contusions.

Dr. Joseph DeSilva, Rock Island, has been elected secretary of the Illinois Penitentiary Commission.

Dr. Emery Hill, Philadelphia, has established himself in practice with Dr. Cassius D. Wescott, Chicago.

Dr. Harry Hayes of Peoria is reported to be on his way home from a year of study in the hospitals of London, Berlin and Vienna.

Dr. Paul S. Scholes has been elected a member of the medical staff of Graham Hospital, Canton, vice Dr. James M. Nelles, resigned.

Dr. Samuel M. Wylie, Paxton, who was operated on for carbuncle at Henrotin Memorial Hospital, Chicago, January 8, has returned home.

Drs. George F. Butler and Leslie E. Mee have associated themselves together and established a laboratory at Wilmette for examination of secretions, specimens, etc.

Dr. Frank H. Jenks of Aurora was appointed superintendent of the Northern Illinois Insane Hospital at Elgin in place of Dr. V. H. Podstata February 28, the change to be in effect March 15.

Dr. Charles E. Crawford, Rockford, special inspector of the State Board of Health, is reported to be seriously ill at his home from exposure and overwork during his official duties at the Cherry mine.

At the annual meeting of the State Board of Health, January 18, Dr. George W. Webster, Chicago, was reelected president for the ninth time, and Dr. James A. Egan, Springfield, was reelected secretary for the fourteenth time and treasurer for the fifth time.

NEWS ITEMS.

—Does the State of Michigan border on Illinois "incidentally" or only accidentally?

—Dr. George W. Mitchell announces that he will practice psychiatry and neurology in Peoria.

—By the will of Mrs. Francis E. Curtis, Chicago, $30,000 is devised to the Presbyterian Hospital.

—A civil service examination to fill the vacancy in the position of the senior physician at the Cook County Hospital was held February 28. The position pays a salary of $1,800, with board and lodging.

—Dr. August W. Meyer of Quincy has been re-elected for the third time as city physician of Quincy for the year 1910 by the Adams County Board of Supervisors.

—Mrs. Anna Binder, Chicago, charged with practicing medicine without a license, is said to have been fined $100 and costs by Municipal Judge Scovell February 8.

—As the proceeds of a comedy presented at Sinai Temple, Chicago, under the auspices of Baron Hirsch Woman's Club, $1,200 was netted for the Winfield Sanatorium.

—A memorial service for the late Dr. Daniel R. Brower, Chicago, was held at the Church of the Epiphany at 10:45 a. m. February 27, the anniversary of Dr. Brower's death.

—Dr. Frank D. Mankin of Kewanee was made a defendant in a bill for divorce in the Circuit Court. Habitual drunkenness and cruelty are the charges.

—Dr. John D. Craig, Chicago, charged with failing to report a case of smallpox to the health department, and sued for $1,000, is said to have been found guilty and fined $25 and costs, February 2.

—The Winnebago County Medical Society has appointed a committee, consisting or Drs. Horace M. Starkey, Edward H. Weld and Emil Lofgren, to ascertain the views of the library board regarding the establishment of a medical branch in the Rockford Public Library.

—Mrs. Ella Seibert, Chicago, a fortune teller and clairvoyant, is said to have been convicted by a jury, January 18, of practicing medicine without a license and to have been fined $100 and costs. The fine was paid.

—The Council of the Chicago Medical Society, at its regular meeting in February, voted to rescind the resolutions passed at its meeting in January and published in the February issue of the ILLINOIS MEDICAL JOURNAL, page 266.

—The physicians of East Moline, Watertown and Silvis met January 26 in the East Moline city hall and adopted a uniform schedule of fees The new schedule is effective February 1. The fees adopted are in accord with those of neighboring towns.

—At a regular meeting of Danville Physicians' Club, January 1, the following officers were elected for 1910: Dr. S. A. Glidden, president; Dr. S. W. Jones, vice-president; Dr. A. S. Dale, secretary-treasurer; Dr. E. E. Clark, librarian.

—Dr. F. H. Jenks, assistant superintendent of the Northern Illinois Insane Hospital at Elgin, was formally indorsed for the position of superintendent by an unanimous vote of the Fox River Valley Medical Society at its semi-annual meeting in Geneva, February 9.

—The warden of Cook County Hospital announces that all but one of the wards of the hospital are at present overfilled. The overcrowding of the entire institution amounts to 189, and this is attributed by the warden

to the increase in population and the growing tendency of individuals who are ill to enter hospitals.

—At the annual meeting of the Lincoln Physicians' Club held January 13, the following officers were elected: President, Dr. William W. Houser; vice-president, Dr. Calvin C. Montgomery; secretary-treasurer, Dr. Harry S. Oyler, and trustees, Drs. Carl H. E. E. Rembe, Frank M. Hagans and Lewis T. Rhoades.

—Dr. Donahue of Hillsdale is said to have been haled before a justice of the peace by a game warden and fined for shooting a quail. The doctor claimed that he shot at a rabbit in a hedge row as he was driving by and wounded the quail accidentally, killing it later to put it out of misery. It does not pay to do the good Samaritan act on all occasions.

—The board of trustees of the Passavant Hospital, Jacksonville, at its annual meeting January 18, elected the following officers: President, J. P. Loar; vice-president, S. W. Nichols; secretary, Carl E. Black; treasurer, F. E. Farrell; members of the executive committee, Dr. Thomas J. Pitner and J. G. Ames, and medical trustee, Dr. Elmer L. Crouch.

—The Postoffice Department, February 17, issued a fraud order against the Dr. Hall Electro-Vigor Company of Chicago, with offices at 167 Dearborn street. The company has been in business for a number of years, making electric belts claimed to banish pain and give health and strength to every organ. Dr. Hall is said to be dead; the business is now carried on by Dr. M. A. McLaughlin, who advertises the belt.

—The newly organized Society of Medical History of Chicago held a meeting in the Auditorium, February 18, with Dr. Isaac N. Danforth in the chair. Dr. Howard A. Kelly, Baltimore, delivered the address of the evening on "Hortus Siccus, a Nosegay from Old Times," in which he gave interesting sketches of some of the older American physicians who were interested in botany and for whom flowers have been named. About seventy were present.

—At the joint meeting of the Physicians' and Press Clubs of Chicago, February 4, Dr. William T. Belfield presided and Prof. Shailer Matthews of the University of Chicago and Dr. Woods Hutchinson, New York City, made addresses. The latter appealed for cooperation in educating the public in sanitary and hygienic matters. Dr. W. A. Evans emphasized the value of the press and of the general practitioner's advice in aiding health boards. Dr. Frank Billings described the relations of the press to the endeavors of the State Board of Charities for the improvement of the charitable institutions of the state.

—The fourth annual meeting of the Chicago Tuberculosis Institute was held January 31. The announcement was made by Dr. Henry B. Favill that $7,000 had recently been given the building fund by Mrs. Keith Spalding, $1,100 to the Edwards Sanitarium by Mrs. Jessie Spalding and $600 for the maintenance of a children's bed in the sanitarium by Elizabeth McCormick. The directors appropriated $600, the proceeds of the sale of Christmas stamps, to support a free bed for nurses afflicted with tuberculosis. The following directors were appointed: Drs. Henry

B. Favill, Frank Billings, Ethan A. Gray, Nathan B. Sachs, Orville W. McMichael, John A. Robison and Edwin Robinson, Mr. David R. Forgan, Miss Laura Shedd and Mrs. Charles F. Spalding.

—On Wednesday, Jan. 27, 1910, nearly 300 Polish doctors and druggists of Chicago attended a ball at St. Stanislaus Hall on Noble and Bradley streets. Before the dance a musical program was given. Mrs. Sophia Labunska of Boston sang a number of classical selections. Dr. A. Pietrzkowski was chairman of the entertainment committee, and it was due largely to his management that the dance proved a success. Other members of the entertainment committee were Dr. W. Statkiewicz, Dr. W. Gormy and V. Bardowski. Preparations are already under way for the dance next year. The annual Polish dance is becoming a regular feature of the year's entertainment. We wonder whether such a large number of Polish doctors and druggists could be collected in any other city in the world.

—It is reported that ill treatment expressed in kicks and pinches was not a reward satisfactory to Mrs. Raymond C. Thayer for the professional education she claims to have given her husband, and recently she sued him for divorce. Her husband, Dr. Raymond C. Thayer, resides at 5050 North Clark street, Chicago. Mrs. Thayer in her bill says she was married Jan. 13, 1897. The alleged cruelties began, she says, the following year. In 1901 she declares he choked her unconscious because she refused to give him money with which to play poker. Alleged plans to send her to an insane asylum on a number of occasions are also related. Mrs. Thayer also sets forth that when she married, her husband had no money or medical education, and that it was her funds she earned as a school teacher that paid for his tuition.

—Dr. A. D. Bevan's report to the Council on Medical Education of the American Medical Association in relation to the Chicago medical colleges is sensational in a way, but it only voices what the local profession has known more or less clearly for a long time. Concerning the state of medical education in general, the report poured the following hot shot:

The standards of medical education in the United States are a disgrace to the nation and an outrage on humanity.

Thousands of physicians may be eliminated from the profession without any embarrassment to the public.

More than two-thirds of the medical schools in the country ought to be abolished.

Flirtations between universities and medical schools ought to cease and those institutions which have become involved in this sort of relation ought either to marry or get a divorce.

—Dr. S. J. King, an advertising cancer specialist, appeared in the Sangamon County Court as defendant in a suit brought by one Frank Lamkin to recover $184 paid by Lamkin to King for medical services. Lamkin claims that his wife was suffering from a fractured leg, which had not healed properly, and that King treated it for cancer and failed to heal it. Dr. King denied that he had treated the wrong disease. He said that the patient was suffering from a cancer in its advanced stages, and to prove it he introduced in evidence a bottle containing a black chunk of flesh as large as a man's hand. He said that the chunk of flesh

was the cancer which he had removed. The bottle was passed to the jury for inspection. The first man who received it made a wry face and handed it gingerly to the next. When the bottle reached Harry Nettleton, a juryman, who was not feeling well at the opening of the trial, he became too ill to remain in the jury box and had to be excused. It was agreed to try the case with eleven men, however, and the trial was concluded. The jury is said to have stood nine to two in favor of awarding damages to the plaintiff.

MEDICAL SOCIETY NOTES.

At a February meeting of the McLean County Medical Society the following resolutions were adopted:

WHEREAS, The President of the United States in his annual message to Congress, has recommended the establishment of a National Bureau of Health, and

WHEREAS, The above recommendation has been endorsed by the medical profession in the United States, and is to be commended in conserving the economic and social resources of our citizens; therefore be it

Resolved, That the McLean County Medical Society endorse this recommendation and urge its early adoption.

Resolved, That the secretary be requested to forward a copy of these resolutions to our Congressman, Hon. J. A. Sterling.

At the first quarterly meeting of the Lee County Medical Society, held at the Dixon city hall February 1, the following officers were elected: President, E. A. Sullivan, Amboy; vice-president, G. P. Powell, Dixon; secretary-treasurer, E. B. Owens, Dixon; delegate to state convention, E. S. Murphy; alternate, A. L. Miller. The next meeting of the society will be held in Dixon in April. The following physicians from out of town were present: William Buckley Peck and Nelson Phillips, Freeport; Jane Reed Keefer and Charles Parker, Sterling. Both of the addresses, "A Few Thoughts on Medical Study Abroad," by Dr. Peck of Freeport, and "Obstetrics," by Dr. Keefer, were educational and practical, and as was stated by one of the local physicians, they were two of the best addresses ever delivered before the local society.

The semi-annual meeting of the Christian County Medical Society, held January 20 at the court house in Decatur, proved one of the best and most interesting meetings ever held by that society. The principal address was made by Dr. J. L. Wiggins of East St. Louis on "Some of the Difficulties Met in Differentiating Between Surgical and Non-Surgical Cases." Dr. D. D. Barr of Taylorville spoke on "Eye Defects and Mental Advancement in School Children, Based on 1,600 Tests in Public Schools." At the close of the meeting the following officers were elected for the ensuing year: President, Dr. J. P. Simpson of Palmer; vice-president, Dr. J. H. Miller of Pana; secretary-treasurer, Dr. H. M. Wolfe of Taylorville; delegate to the state convention, which will be held in May in Danville, Dr. Guy Armstrong; censors committee, Dr. James Simpson of Morrisonville, Dr. C. L. Carroll and Dr. P. Pierson of Taylorville; legal committee, Dr. J. H. Miller of Pana. Dr. Fred W. Bechtel

of Pana was admitted to membership. The next convention will be held here on June 29.

At a special meeting of the North Side Branch of the Chicago Medical Society, held Tuesday, Feb. 15, 1910, to consider the action of the Council in redistricting the North Side Branch, the following resolutions were carried unanimously:

WHEREAS, The Chicago Medical Society of Cook county, subdivided the county into districts, each district constituting a branch of the main society; and

WHEREAS, The chief end in view in defining the boundaries of the said district was and should be the convenience of the members residing therein in reaching a common place of meeting; and

WHEREAS, The boundaries of the North Side Branch as heretofore defined are perfectly satisfactory to members residing therein; and

WHEREAS, The redistricting of the North Side Branch as enacted by the Council of the Chicago Medical Society at its last meeting, held Feb. 8, 1910, deprives the branch of one of its councilors in the Council of the Chicago Medical Society; therefore be it

Resolved, That the North Side Branch resents the action of the Council of the C. M. S. of Feb. 8, 1910, in subdividing the North Side District without the knowledge, consent or approval of the members thereof, and hereby expresses its disapproval of the policy shown by the Council of the Chicago Medical Society of arbitrarily changing the boundaries of the district for purely political purposes; and, furthermore, be it

Resolved, That the councilors of this branch be and hereby are instructed to present this protest to the Council of the Chicago Medical Society at its next meeting, and to urge the Council to rescind its action of Feb. 8, 1910, whereby the boundaries of the North Side Branch were thus changed.

PUBLIC HEALTH.

—Under the head, "Fighting Tuberculosis," the health department, Chicago, in a recent bulletin, detailed the methods and agencies employed in local control of the disease.

—Seven cases of smallpox were found last month in a small tenement house in Peoria occupied by two large families. An epidemic was feared by the health officials, from the fact that members of the family worked in a factory, and it is supposed that many people were exposed to the contagion.

—In a statement issued by the Department of Health, Chicago, it is shown that of 326 who died of consumption during January, 176 had never been recorded at the health department while living, and 84 others were not reported until within a month of death. There is no necessity for this neglect, as patients who are unable to employ physicians may go to one of the seven dispensaries of the Chicago Tuberculosis Institute, and in addition the Department of Health furnishes tuberculin free to aid diagnosis, and will instruct physicians how to use it, or will send an expert to assist in the administration.

—At the annual meeting of the board of directors of the Chicago Tuberculosis Institute, held February 18, it was reported that 1,225,325 Red Cross Christmas stamps had been sold in Chicago, leaving more than

$9,000 available for local use. The following officers and heads of departments were elected: President, Dr. Henry B. Favill; vice-presidents, Drs. Frank Billings and Robert H. Babcock; secretary, Mr. Sherman C. Kingsley; treasurer, Mr. David R. Forgan; head of the sanatorium department, Dr. Theodore Sachs; head of the dispensary department, Dr. Ethan A. Gray, and head of the educational department, Dr. Orville W. McMichael.

—Dr. Gottfried Koehler has been appointed Assistant Commissioner of Health of Chicago, succeeding the late Dr. Frank W. Reilly, who filled the position with distinguished ability from 1895 till his death in December last. In a promotional civil service examination last month, Dr. Koehler received the highest mark of the three candidates for the position. There was some uncertainty as to which officials of the department were eligible. Even the question as to whether the incumbent must be a medical man was in doubt. Dr. Koehler was graduated at the Northwestern University Medical School in 1902. He served an internship in the Cook County Hospital. He is Adjunct Professor of Pediatrics at the College of Physicians and Surgeons and attending physician to the children's department of the Cook County Hospital. He has held the position of Chief Food Inspector for two and a half years. Under his supervision the bureau of food inspection has become one of the most efficient in the department, especially in relation to the control of the milk supply of the city.

—Incorporation papers for the Valmora Sanitarium of New Mexico, mentioned in the January JOURNAL, were filed at Springfield February 14. No capital stock was named, as the organization is not for profit and is expected to be self-sustaining, in pursuance of the New England method of treating the "White Plague" by light labor. The work of raising $50,000 for the purpose of purchasing the ranch and making improvements and enough surplus to sustain the sanitarium for one year is in the hands of business men of Chicago. It is stated that already enough has been subscribed to indicate success for the initial fund. Physicians are not to be solicited for subscriptions. "What is termed the middle class of wage-earners—who comprise 90 per cent. of those afflicted with consumption—will be the patients. The promoters argue that charitable institutions care for the poorer tubercular victims, while the rich can buy the best treatment. The middle class heretofore have been too proud and too poor for these two remedies, and it is for their benefit that an institution has been established where room, board and medical attention can be obtained for $10 a week, with a chance of the patient decreasing this by health-giving and profitable labor about the ranch. The Valmora institution was started by Dr. Brown five years ago. It now has twenty-four patients. These accommodations will be immediately enlarged to take care of fifty. The ranch is 25 miles northeast of Las Vegas, near Watrous, on the main line of the Santa Fe system. There are 1,000 acres of ground in the Coyote river valley, surrounded by wind-breaking mesas. The altitude is 6,300 feet; the average yearly rainfall eighteen inches; the temperature mild, and the sun shines 300 days in the year. The improvements consist of an administration building and some twenty

cottages, of one room each, thirty feet apart. These cottages have electric light and running water, supplied from a nearby spring, which discharges 22,000 gallons daily. An infirmary, laboratory and operating room will be built at once. After the patient has had a few days to become acclimated he is given two hours daily work, which is increased one hour each week until he is able to do a day's labor without effort. Similarly his pay is increased and his expenses lessen. Poultry and truck farming, dairying and bee-keeping will be taught to furnish a livelihood for those who may not want to chance an immediate return to the east. The incorporators, who are also directors, are: Dr. E. Fletcher Ingals, Dr. Edwin B. Tuteur, Dr. J. M. Dodson, Dr. Charles L. Mix, Dr. Frederick Tice, John M. Glenn, J. M. Blazer, E. N. Skinner, Phillip L. James, A. A. Sprague II, Julius Rosenwald, John Wolff, Joseph E. Otis, E. D. Raynolds. Other Chicago physicians and business men interested in the project are Dr. J. B. Murphy, Dr. Arthur M. Corwin, Dr. Frank Billings, Dr. George W. Webster, Dr. R. H. Babcock, Dr. George H. Simmons, Dr. John A. Robison, Dr. B. W. Sippy, Dr. A. J. Ochsner, Dr. H. B. Favill, Dr. W. F. Scott, Dr. A. R. Edwards, Dr. O. L. Schmidt, Dr. N. S. Davis, Dr. O. T. Freer, La Verne W. Noyes, R. A. Morley, Mortimer D. Hull, E. B. Butler, Joseph Basch, John T. Pirie, John G. Shedd, J. W. Scott, Finley Barrell, Edward Morris, R. T. Crane, C. H. Conover, W. G. Hibbard, Jr., Hugh Chalmer, Detroit; Murray Carleton, St. Louis; J. H. McDuffee, Denver. Dr. W. T. Brown of New Mexico will be the superintendent of the sanitarium. The permanent officers elected at a meeting of board of directors Feb. 17, 1910, were: President, Dr. E. Fletcher Ingals; vice-president, John F. Wolff; secretary, Dr. Edwin B. Tuteur; treasurer, Joseph E. Otis.

INCORPORATIONS.

Robinson's Royal Remedy Company, Carmi; capital, $2,500; manufacture, sale and disposal of medicines; incorporators, E. M. Robinson, John G. Powell, S. J. Loyd.

Young's Specific Remedy Company, La Salle; capital, $20,000; manufacturing and dealing in medicines and merchandise in general; incorporators, John R. Young, Thomas N. Haskins, B. W. Hetherington.

CHANGE OF LOCATION.

Dr. A. S. Taylor has removed from Tallula to Roby.
Dr. E. A. Everett has removed from Grantfork to Alhambra.
Dr. R. Claridge has removed from Champaign to Grantfork.
Dr. S. J. Elmore has removed from Metropolis to Grantsburg.
Dr. Len McAuley has removed from Upper Alton to Grafton.
Dr. C. M. Kaley has removed from Newton to Caldwell, Idaho.

Dr. A. C. Ragsdale has removed from Creal Springs to Metropolis.

Dr. Irvin J. Heckman has removed from Hinckley to Colton, Cal., care of Ira Oaks.

Dr. Richard M. Fletcher, Jr., has removed from Lake Forest to 1011 Forest avenue, Wilmette.

MARRIAGES.

Louis A. Greensfelder, M.D., to Miss Ethel Grace Rooks, both of Chicago, February 7.

Charles A. Roberts, M.D., Rochelle, Ill., to Miss Marie Teterle, of Lowell, Mich., January 6.

Elmer Philip Stiehl, M.D., Floraville, Ill., to Miss Ottilie C. Gauter, at Floraville, Nov. 23, 1909.

Alexander Francis Stevenson, Jr., M.D., Chicago, to Miss Karen Nielson, of Copenhagen, at Chicago, February 7.

DEATHS.

A. C. Hatfield (license, years of practice, Ill., 1878); died at his home in Adair, January 27, from valvular heart disease, aged 64.

Edward I. Hirschfeld, M.D. Illinois Medical College, 1909; died at the North Shore Health Resort, Winnetka, February 6, aged 44.

Harry Weston Merrill, M.D. Rush Medical College, 1883; died at his home in Maywood, Ill., February 2, from cerebral hemorrhage, aged 53.

Henry G. Wheeler (license Ill., years of practice, 1880); a veteran of the Civil War; died at his home in Breckenridge, Ill., Nov. 21, 1909, aged 67.

David M. McFall, M.D. Jefferson Medical College, 1857; founder of the Memorial Hospital, Mattoon, Ill.; died at his home in that city, February 13.

Flint Hart, M.D. Keokuk (Iowa) Medical College, 1892; of West Point, Ill.; died in St. Mary's Hospital, Quincy, February 6, from heart disease, aged 41.

Henry Baughman Hamilton, M.D. Transylvania University, Lexington, Ky., 1847; died at the home of his son in Dwight, January 29, from senile debility, aged 87.

William F. Benefiel (years of practice, Ill., 1877); a veteran of the Civil War; died at the home of his daughter in Atwood, February 5, from pneumonia, aged more than 80.

John H. Fawcett, M.D. Missouri Medical College of St. Louis, 1874; formerly of Grant Park, Ill.; a veteran of the Civil War; died at his home in Ashland, Ore., Feb. 22, 1909, aged 69.

Abraham C. Smith, M.D. Pulte Medical College, Cincinnati, 1879; Eclectic Medical Institute, Cincinnati, 1879; formerly of Chicago; was

found dead in his bed in Tulsa, Okla., Dec. 19, 1909, from asphyxiation by gas, aged 68.

Ernest H. Plasch, M.D. University of Berlin, Germany; formerly of German Valley and Mount Carrol, Ill.; a practitioner of Illinois since 1873; died at the home of his daughter in Mount Carroll, February 3, from dropsy, aged 71.

David W. Magee (license Ill., 1879); for thirty-five years a practitioner; brevet brigadier-general during the Civil War; for two terms postmaster of Peoria; died at the home of his daughter in that city, January 18, from senile debility, aged 84.

John Emerson Prather, M.D. St. Louis College of Physicians and Surgeons, 1896; a member of the American Medical Association; of Winchester, Ill.; taken ill, January 4, while making a professional call in the country, died, January 16, from pneumonia, aged 43.

Rufus Woods Gillette, M.D. Dartmouth Medical School, Hanover, N. H., 1872; local surgeon at Danville, Ill., for the Chicago & Eastern Illinois Railroad for more than twenty years; died at St. Elizabeth's Hospital in that city, January 20, from locomotor ataxia, aged 60.

Willard P. Naramore, M.D. Starling Medical College, Columbus, Ohio, 1852; a member of the Illinois state legislature in 1852, and of the Illinois Constitutional Convention in 1861; president of the Lena (Ill.) Bank; died at his home in Lena, January 29, from senile debility, aged 85.

Edwy Joseph Ogden, M.D. Victoria College, Coburg, Ont., 1855; New York University, New York City, 1855; a member of the American Medical Association; formerly chief surgeon of the Western Lines of the Erie System; died at his home in Chicago, February 14, from an infection of the kidneys and prostatic hypertrophy, aged 80.

David Hillis Law, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1861; a member of the American Medical Association; assistant surgeon of the Thirteenth Illinois Volunteer Infantry during the Civil War; a member of the Lee County Pension Board; and for more than forty years a practitioner of Dixon, Ill.; died in a hospital in Brownsville, Texas, February 13, aged 78.

Frederick Wentworth Mercer, M.D. College of Physicians and Surgeons, New York City, 1862; a member of the American Medical Association, British Medical Association, American Microscopical Association; vice-president of the Illinois Microscopical Society, and a fellow of the Royal Microscopical Society of England; for some time medical superintendent of the Illinois State Soldiers' Home; assistant physician at the Anna State Hospital from 1873-1879; died at his home in Chicago, Feb. 9, 1910, from heart disease, aged 71.

Book Notices.

Dose-book and Prescription-writing. Fourth Revised Edition. By E. Q. Thornton, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. 12mo of 410 pages, illustrated. W. B. Saunders Company, Philadelphia and London, 1909. Flexible leather, $2.00 net.

Professor Thornton has taken up in a thorough manner the matter of prescription writing, a subject which is usually neglected by the great majority of practitioners. Practitioners will find in his work accurate information on the entire subject of prescription writing and a description of the methods of preparing many of the elegant pharmaceutical preparations typical of the present day science. The work includes a consideration of so much of the Latin tongue as may be necessary for an understanding of its use as applied to the preparation of prescriptions.

A Manual of Normal Histology and Organography. Second Edition, Revised. By Charles Hill, Ph.D., M.D., formerly Assistant Professor of Histology and Embryology, Northwestern University Medical School, Chicago. 12mo of 468 pages, with 312 illustrations. W. B. Saunders Company, Philadelphia and London, 1909. Flexible leather, $2.00 net.

Professor Hill, who formerly was a professor in Northwestern University Medical School, Chicago, and at the University of Washington, has prepared this work for elemental students. The author believes thoroughly in the laboratory method of study but only the fundamental principles of laboratory techniques are outlined in the text. The alterations, although not extensive, should add to the usefulness of the book.

A Text-book of Physiology. For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Third edition, thoroughly revised. Octavo of 998 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $4.00 net; half morocco, $5.50 net.

Professor Howell's Physiology in the third edition incorporates all new facts that have been added as a consequence of improvements in the methods of so-called physical physiology; and the extensive application of chemical methods of investigation. He acknowledges that physiology is yet in the stage of development. Special attention is given the new and suggestive contribution by Rubner to the difficult subject of "Growth and Senescence." This and other portions of the work furnish a clew to the practical character of the pages and all practitioners will be benefited by reading this interesting volume of nearly one thousand pages.

Examination of the Urine. A Manual for Students and Practitioners. By G. A. DeSantos Saxe, M.D., Instructor in Genitourinary Surgery, New York Post-Graduate Medical School and Hospital. Second edition, enlarged and reset. 12mo of 448 pages, illustrated. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $1.75 net.

In this Manual Dr. Saxe has furnished a concise guide to the examination of urine for the practitioner in his daily work and the student in his laboratory work. Special attention has been paid to diagnosis and to the interpretation of findings. A clinical study of urinalysis has been still more markedly emphasized in the second edition. A number of chapters have been rewritten and much new material included in this edition. A number of new and original illustrations have been added and it is believed that the work is up-to-date in every respect. One of the valuable points is the list of reagents, apparatus, etc., necessary for urinalysis as well as a sample index card for this purpose.

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ORIGINAL ARTICLES

INDICATIONS FOR HERNIOTOMY IN INGUINAL HERNIAS.*

E. S. JUDD, M.D.
Junior Surgeon to St. Mary's Hospital
ROCHESTER, MINN.

That operation is the safest and most rational treatment of inguinal hernia in the adult is recognized at this time by almost every one. It is true that a truss may be worn satisfactorily in some instances during this period, but the time is almost sure to come when the appliance will not hold, and the hernia will then be much more difficult to cure by operation.

Treatment by injections appears to be not only unsatisfactory, but dangerous. There seem to be two questions regarding the indications for herniotomy that we are not all agreed upon: (1) The time for operation in children, and (2) as regards operation in the old person who is not otherwise entirely well.

Operations for the cure of existing inguinal hernia in children and the reconstruction of the area to prevent recurrence of the condition are not difficult procedures and should be attended with practically no mortality or future trouble. It appears that in all probability the obliteration of the vaginal process of the peritoneum begins at a point near the external abdominal ring. In case the obliteration does not extend to the internal abdominal ring there is still a sac remaining which is a congenital defect, and a viscus descending into the sac constitutes a congenital hernia, in spite of the fact that there is no communication with the tunica vaginalis.

No doubt a very large majority of all inguinal hernias, in children at least, are congenital, and a cure will be brought about only by a complete obliteration of the vaginal process. This can be accomplished in a certain percentage of cases by the rigid and persistent wearing of

* Read before the Chicago Medical Society, Dec. 15, 1909.

a truss. Just how many patients are cured in this way is difficult to estimate, because some who are all right for a time will suddenly, by an extra effort, force the bowel into the only partialy obliterated sac. This may not happen for months, or even until the patient reaches adult life, though when it does occur it is apt to be serious, as it is this type of case which so often becomes strangulated.

In reviewing the histories of 15,000 cases of inguinal hernias in adults Coley found that about one-third of them had had hernia in infancy or childhood. Some observers go so far as to say that all inguinal hernias up to the period of middle life are congenital, and almost every one is agreed that a typical acquired hernia is a rare condition.

In a series of nearly 3,000 herniotomies, we have operated upon about 500 patients who were under 20 years of age, and approximately 200 of the number were under 5 years of age. There has been no mortality following these operations in children and only two relapses. One relapse came in a boy 12 years old, who had a preperitoneal hernia. The protrusion showed as soon as he was allowed to be up, and we believe that it came through a part of the sac that was not properly closed at the first operation. The second relapsing case was a boy 9 months old with a very large hernial sac, containing omentum that could not be reduced before operation. A small piece of this had been jammed with a truss, and was removed, the sac ligated high and the internal oblique muscle and the conjoined tendon sutured to Poupart's ligament anterior to the cord. The relapse came in nine months, and at the second operation we closed by transplanting the cord.

Feeling confident that the operation will be attended by unusually good results, with practically no mortality, and that any other method of treatment, such as wearing a truss, does nothing toward an actual obliteration of the vaginal process, and is, therefore, not a true cure, we believe that the operation should be performed at a time most suitable for the patient and for the parents. The indication for performing herniotomy in the child or infant with an easily reducible and painless inguinal hernia is not because of the inconvenience it gives the child, but because of the trouble and anxiety to the child's mother. If away from the child she worries, constantly fearing that the truss will work loose or the hernia come down; she will feel that the child must be kept quiet and housed up when he should be out of doors, all of this uneasiness and care for the mother in the hope that the hernia may heal without operation. Suppose it does heal; there are still many chances that it will open again, and at a time much less suitable to have it repaired, and when it will present a much more serious condition.

If the hernia is strangulated it should, of course, be operated upon at once. If it is incarcerated, increasing in size, or is a source of pain to the child, there will be nothing gained by waiting, no matter at what age the patient comes for examination. Operating upon the child is not as difficult as operating upon the adult. It is seldom necessary to disturb the cord. Free the sac from the cord just outside the external ring and continue the dissection downward to the termination and up-

ward to the internal ring by working through the opening of the external ring. The sac should be ligated as high as possible and allowed to drop back. Great care should be taken to avoid the vas deferens, as it is usually intimately associated with the sac, and in children is frail and easily injured. Having freed the sac at the external ring, it is more convenient to open it at once in order to introduce a finger to aid in the dissection and preservation of the vas, and also to determine whether the obliteration has separated the peritoneal cavity and the tunica vaginalis. In event there is no evidence of obliteration and the hernial sac and tunica vaginalis are one and the same process, it will be necessary to divide this sac near the neck, then continue the dissection of the proximal part to the internal ring, and ligate, saving the distal portion as a tunica vaginalis. It is better to keep this an open sac, as the traumatism of the operation may cause an increase in the amount of fluid, and if the sac is closed a temporary hydrocele might result. This will be avoided by allowing the tunica to close at will.

Having disposed of the sac, the cord is dropped back to its normal position, and in most cases one stitch of chromic catgut approximating the conjoined tendon to Poupart's ligament will suffice. In case the internal oblique and the conjoined tendon are not well developed, a small incision in the aponeurosis of the external oblique in the region of the internal ring, not opening the external ring, will give room to suture the internal oblique to Poupart's ligament, just saving space for the cord structure to pass through. The superficial fascia is closed by fine, plain catgut, which is continued through the skin as a subcuticular stitch. The wound is sealed by covering it with a small piece of absorbent cotton saturated with compound tincture of benzoin. Over this a small piece of gauze is held in place by adhesive tape.

The mother is given the ordinary instructions as to diet and laxatives, and is allowed to take the child from the hospital a few hours after he has recovered from the anesthetic. A little paregoric will relieve the pain of the first night; after that he will require nothing more than ordinary care. There are no stitches to be removed, so that in a few days, when the wound is properly healed, the patient may be taken home.

By far the greatest percentage of relapses following operations for inguinal hernia come after operations upon patients in old age. In our experience, also, the majority of strangulations occur in people past middle life. It is not unusual to see a hernia of fifty years' standing that has always been easily reducible suddenly become strangulated. Before advising operation for old people we should thoroughly examine other conditions. If an old man is obliged to get up several times at night and strain to void urine, we must correct this condition before operating for the hernia or he will be almost sure to bring on a relapse by the constant straining. If the hernial opening is increasing in size and the protrusion constantly creeps outside the truss, the patient is in danger of the hernia strangulating, and the operation should be done, using a local anesthetic if necessary. The relief following the cure of hernia in old people is often much more than just the local condition, and as

soon as these patients can get about without the constant worry and dragging, or the pressure of the truss, they will become active and much improved in a general way.

In operating upon old people we have the thin white scar tissue of the internal oblique to close the opening. There frequently is almost an obliteration of the conjoined tendon. The opening is either direct anatomically or has become so from long standing. The relapses we have seen in these cases have come just above the pubic bone; for these reasons we always transplant the cord and close the lowest angle as closely as possible, opening the sheath of the rectus and using that muscle if necessary.

In conclusion: It seems to me (1) that the simplest and most satisfactory way of treating inguinal hernia in children is by operation and the chief indication for performing it, the trouble and consequent anxiety to the mother in caring for the child in this condition. (2) Herniotomy is the only safe method of treating inguinal hernias in adults. (3) The operation can be done with much better satisfaction and more safety in old people than was formerly believed.

BAD NAUHEIM: ITS TREATMENT AND THERAPEUTIC VALUE.*

J. H. Honan, M.D.

BAD NAUHEIM AND BERLIN.

In taking up this subject I wish to first say a few words in regard to the early history of this celebrated bath place. At the time that the Roman Empire flourished these springs were recognized as having curative properties, and have been used more or less ever since.

This year, in a neighboring village, they celebrated the nineteen hundredth anniversary of the victory over the Romans, when Herman, the German chief, with his followers, slew Varus and his forty thousand men. In recent times there has been abundant evidence in discoveries in and around the springs of relics of Roman occupation.

It was, however, in 1835 that Bad Nauheim became a Kur Ort or medical bath place. Scientific study of the baths was first made by Professor Beneke, of the University of Marburg, who practiced in Nauheim from 1857 to 1882. It was he who discovered the great therapeutic value of these baths in cardiac troubles, and his publications giving the results of his 25 years' experience in treating heart cases at Bad Nauheim are still valuable guides for treatment. The Grand Ducal administration of the city of Bad Nauheim gives every credit to Professor Beneke, and is now preparing to erect a monument to honor his memory.

The early observations of these springs were made by good men. The great German chemists, Bunsen and Leibig, made most of the early anal-

* Read at a meeting of the Chicago Medical Society, Jan. 5, 1910.

yses of the waters. From 95 patients who visited the baths in 1835 the numbers have grown to nearly 35,000 in the present year. This increase is not due so much to the writings of practitioners in Bad Nauheim as it is to the observations of thousands of physicians in the different countries who have had innumerable opportunities of studying the improved condition of their patients after their return from Bad Nauheim. There is so much of real therapeutic value in the baths of Nauheim that I know all progressive practitioners of to-day will appreciate a truthful and unprejudiced opinion of the most recent studies of these waters.

In the present age, when the tendency is to use less medicine and depend more on physical means to combat disease in general, and heart disease in particular, it behooves us all to get as broad and comprehensive a knowledge of the working of these methods as possible. Von Leyden of Berlin is one of the prominent men who has urgently and energetically taught the great advantage of using physical methods and particularly baths in cases of rheumatism and heart diseases. One of the first distinguished physicians of America to warn his confrères against over-drugging was Oliver Wendell Holmes. Many others might be mentioned among the well-known men of to-day who are using their materia medica less and less every year. Living, as we do, in an iconoclastic age, conservatism is the only sane path for the practitioner to pursue. The subtle sophistries in pharmacology that allure the practitioner into enthusiastic faith of a given drug to-day, which to-morrow may be cast aside as worthless, have caused thinking men to rely less and less on medical agents.

Baths may bring about their physiologic results in three ways—by their chemical action, by their thermal action or by their mechanical action. It is a well-known fact that carbonic acid baths have a special action on two organs of the human body—the heart and the skin. The heart is strengthened by the increased flow of blood in the coronary arteries due to the action of the carbonic acid on the vasomotor nerves and the increase of blood in the coronary circulation.

The action on the skin is due to the influence on the vasomotor nerves which increases the capillary circulation. The mechanical action is attributable to the fine particles of combined mineral salts coming in contact with the skin of the patient in the bath, naturally stimulating the skin and increasing its circulation.

The thermal effect is of great importance in all these baths. It acts by dilating the peripheral vessels, causing less resistance in the circulation with a corresponding decrease in the blood pressure. During the past year I made a number of tests with cases of high blood pressure, and with one or two exceptions found a decrease of one to four mercurial mm., using the Uskoff sphygmotonograph, making usually three tests after the patient had been in the bath 2, 4 and 6 minutes, respectively. I found the decreased blood pressure lasted for some time after the baths and then gradually resumed its former high tension. As the treatment continued the decreased pressure lasted longer and rose more slowly and did not reach its former high tension. By this increased circulation metabolism

is improved, congestion relieved, waste and toxic products removed and the action of the heart very much strengthened.

We get the physiologic results of baths chiefly through the reflex and mechanical effects. The skin is connected reflexly with the interior of the body by filaments from the same nerve center which lead to visceral or vascular positions. The reflex effects we observe on the skin take place also in the viscera only in a less degree; as the peripheral vessels dilate the internal vessels contract, and *vice versa,* obeying the law of antagonism between the peripheral and internal circulations. This law was first proved in the human by Professor Miller of Tübingen. The stimulation of the circulation by the Nauheim baths gives us a positive indication in the selection of suitable cases for treatment.

Here let me interject a word of warning to my American colleagues to use more care in selecting cases for the Nauheim treatment. There are patients sent to Nauheim every year who should never be subjected to the fatigue and worry incidental to a journey, their condition being beyond the reach of any hydrotherapeutic or other measure. When broken compensation has reached an advanced stage, where no reserve force is left to respond to stimulation, it is worse than useless to advise such patients to try baths. They should not be allowed to leave home or undergo any personal discomforts.

The physiologic action of the baths depends on so many conditions, such as temperature, amount of carbonic acid, duration of the bath, etc., that all must be carefully considered in summing up a judgment of any baths. The analyses of the Nauheim springs have received such wide publication that I shall not take up time in repetitions. I wish, however, to call attention to two important factors in this connection—the large amount of calcium salts, about 2.5 grams per thousand, sodium salts, 27.2 per thousand, and the large per cent. of carbonic acid found by actual measurement during the time the patient is in the bath and at the time he leaves the bath, as the following table shows:

Tests.	Active Co_2 I. E. Absolutely Free and Half Combined.		Of Which Absolutely Co_2		Temp.
	gm.	c.cm.	gm.	c.cm.	
1. At the outflow of the spring....	3.6212	2051	2.8733	1636	32.98° C.
2. As the water comes into tub....	2.3039	1307	1.5560	882	31.70° C.
3. The bath tub when filled.....	1.9165	1088	1.1686	663	31.7° C.
4. After the bath has been taken..	1.8162	1031	1.0683	606	31.6° C.

To the presence of these salts is due the activity and great therapeutic value of these Nauheim baths. The carbonic acid, as we know, greatly accelerates the action of the calcium and sodium salts in which, as you see, the Nauheim springs are very rich.

There are nine mineral springs in Bad Nauheim, three of which are thermal effervescent springs, differing in their ingredients and in their temperature. The three springs known as Nos. 7, 12 and 14 discharge about 2,400,000 liters of water a day, which is enough for 6,000 baths. These springs have a depth from 160 to 210 meters. Their temperatures are, respectively, 88.9, 95.50 and 90.7 F. They also differ materially in their salts. From the waters of these three all the different kinds of baths are given; that is, the five that bear distinct names and any number of

modifications and combinations of which the temperature and the different qualities of the waters admit.

The usual course of treatment begins with what is called the *thermal bath*, although there are exceptions where the brine bath is first used, as I shall explain later. All the baths are thermal or warm, though the first of the course has had the word "thermal" thrust upon it as a proper name. The thermal bath, with which the course is begun, as I have said, is prepared from water which is kept in open reservoirs and is one-half saturated with CO_2. The water is yellowish, showing an oxidation of iron. This bath usually has a quieting effect on the patient, but occasionally a patient may have such a hypersensitive skin that the fine particles of the combined mineral salts coming in contact with the skin excite instead of soothe. The first bath I usually give at a temperature which the Germans call the "Indifferenzpunkt"; that is, the neutral temperature which produces neither the physiologic effect of heat or cold as shown by the manometer. While this zone of neutral temperature may vary with the individual, tests show that the variation is very slight and that the neutral point may safely be placed at 34 C., or about 92 F. The duration of the first bath is from 3 to 9 minutes, according to the condition of the patient. The physician may order a half bath, the water reaching the lower part of the chest; or a three-quarter bath, the water reaching to the nipples; or a full bath, the water covering the entire thorax to the base of the neck. If there is any doubt about the patient being able to take a bath of the natural water, he may order fresh water to a sufficient dilution. If a stronger bath is indicated he may order it prepared from two springs, one richer in mineral salts, the other in CO_2. After each bath the patient is ordered to rest in the recumbent position from 1 to 2 hours. Some of the bathrooms are provided with beds where patients for whom the physician thinks it necessary may rest. Usually after five or six of these *thermal* baths, which have gradually been increased in strength and duration, the patient is promoted to the next grade, to the so-called *thermal sprudel* bath. The word sprudel means effervescent, as those familiar with German know.

The water of the *thermal sprudel* bath is, under normal atmospheric pressure, a saturated solution of CO_2. As the water for these baths is run from the springs into closed reservoirs it has undergone less oxidation; hence is clearer than the water of the thermal. Here, again, the physician has the choice of the three springs with their different proportions of CO_2, salts and temperature, or he can make such combination as he thinks best.

The next promotion for the patient is to the *sprudel* bath. The name signifies that more emphasis is given to its carbonic acid. The water for the sprudel bath flows directly from the spring into the bath tub. It contains a large quantity of free CO_2, which collects in innumerable fine bubbles on the skin of the patient and on the sides of the tub. The surplus CO_2 is carried off by ventilating pipes. This is a very agreeable bath and one of great therapeutic value. I have frequently seen the pulse reduced from two to six beats after an immersion of 3 to 5 minutes in the tub.

The *strom sprudel* bath is a current bath water flowing directly from the spring in a constant current into the tub over the patient and out of the tub. In fifteen minutes about 2,380 liters of CO_2 flow over and around the patient. This is a most exhilerating bath, and, as one of my New York medical friends expressed it, "this is the nearest thing to a champagne bath I ever expect to have." This is rarely given more than once at the end of the treatment. For some patients it is better to begin the course of treatment with the sole or brine bath instead of the thermal bath. This is particularly true in cases of rheumatism or where the patient may have a hypersensitive skin. This is usually the bath that is prescribed for children.

In Bad Nauheim there are commercial salt works which are as old as the history of the place. Traditions of a century ago relate that, since the salt works were outside of the walls, the gates of the city were locked and guarded more to keep the Nauheimers from stealing the salt than to protect the inhabitants from the dangers without.

The Grandier werke, or evaporating works, look like extensive railroad trestles. The great wooden frames, about 30 feet high, are filled in from top to bottom between the piles with blackthorn twigs. The water from the springs with about 3½ per cent. of sodium chlorid flows through open runs to the foot of the evaporating works, where it is pumped to the top. In trickling down over the blackthorn twigs it loses most of its combined mineral salts and all its carbonic acid, reaching the vats as about a 24 to 26 per cent. solution of sodium chlorid. This brine is carried to one of the bath houses, where the sole or brine baths are given. Naturally if this brine is too strong it may be weakened by the addition of fresh water or it may be strengthened, as may all other baths, by the addition of mutter lauge or motherlye. This motherlye is a concentrated solution of the spring water after most of the sodium chlorid has been extracted, and is a product of the saline works. In a full bath containing about 20 cubic feet of water from the two stronger springs it is estimated that there are about 36 pounds of solid ingredients.

The indications for treatment by the baths of Nauheim are many and deserve careful study. In reviewing these indications we must give first place to articular rheumatism; in fact, this is so often a precursor of heart disease that I consider it as pathognomonic of cardiac trouble and feel that the acute form in particular should be classed as a premonitory symptom. Several English pathologists have recently emphasized the constancy with which endocarditis follows acute articular rheumatism and have proved the invariable presence of fibroblasts in the endocardium following this disease. These fibroblasts are not found in endocarditis following other infectious diseases, such as pneumonia, diphtheria, scarlet fever, etc.

Among the circulatory diseases that are now occupying a prominent place in medical literature is arteriosclerosis. My own experience with this disease leads me to accept the opinion of Sir James Barr, who says that "you may not merely stay the progress of these degenerative lesions, but, what is infinitely more important, you may often prevent their occur-

rence." The changes noted in patients taking the Nauheim treatment, suffering from this disease, I am sure warrants one in the statement that the disease is not only stayed, but positively improved. The heart muscles are strengthened, the tone improved, and the better blood supply soon repairs the damaged tissues. In passive dilatations due to congestion the improvement is most marked. In this the action of the baths resembles that of the digitalis group. In many cases where digitalis has failed, these carbonic acid baths have proved very beneficial. Especially in cases of cardiac insufficiency the effect is more permanent and the general condition is much improved.

Here I wish to emphasize the necessity of studying each individual case. As there is no hard and fast rule governing the physiologic action of carbonic acid baths, each patient should be observed in the bath, particularly the first bath, that the exact effect of such baths may be carefully noted. It is my custom to examine every patient in the bath or have a trained nurse make the observation. In this way I am able to watch the reaction of the heart more closely, which is a positive indication in directing the treatment further. From the nature and varied conditions that are active in all carbonic acid baths, it is impossible to know beforehand just how a patient may stand the treatment. Therefore I consider it absolutely necessary that such precautions be taken. If there is any marked feeling of oppression or difficulty in breathing, he should be removed from the bath at once. This again proves the necessity of seeing the patient in the bath.

The heart and stomach are so intimately related in functional activity and so react on each other that the question of diet becomes an all-important one in the treatment of cardiac cases. What constitutes the most suitable diet in these cases depends on the individual. In drawing up a diet for cardiac cases we must first try to regulate it so as to keep up the nutritive equilibrium with the least possible tax on the digestive organs. A large class of patients that suffer from heart failure are fat, flabby, lethargic persons who are fond of eating and especially fond of the things they should not eat. We have another class of heart cases, persons who are thin, dyspeptic, neurasthenic, who are undernourished and require most careful study to build up their general condition. In cases of rheumatism and gouty complications we must restrict the acid-producing foods, as we here always encounter hyperacidity and hyperchlorhydria. There is always a tendency to formation of fibrin in these rheumatic cases; consequently all fibrin-forming substances, such as gelatin, milk, cheese, and all animal jellies should be strictly forbidden, allowing sufficient fruits, vegetables, a small quantity of lean meat, fish and fowl to keep the patient in good condition without adding to the body weight.

The blood pressure is an indication that usually decides regarding the amount of fluid allowed, as large quantities of fluids raise the blood pressure they should naturally be restricted. Lime also increased the blood pressure; therefore milk and all lime-containing substances should be interdicted.

I have seen some splendid results in cases of arteriosclerosis or arterial degeneration follow an absolutely meat-free diet, and in these cases again we have often an increased blood pressure and must restrict the consumption of anything which tends to increase the pressure in the already damaged arterial wall. The great majority of these cases have a marked excess of uric acid and a high per cent. of indican, denoting a faulty metabolism due to intestinal fermentation, many showing the cardiac vascular changes of chronic lithemia.

Aside from the three thermal bathing springs in Bad Nauheim, there are six drinking springs, four of which are extensively used for medicinal purposes. Recent investigations indicate the high therapeutic value of radioactive water, and it is quite possible the great value of two of these drinking springs is due to their high per cent. of radium emanations. There are now arrangements being made by which these springs will be used also for bathing purposes, which will enable us to give baths of high efficiency in radioactivity.

The most positive contraindications to the intake of fluids is a mitral lesion. In these cases naturally the fluids must be restricted to the lowest possible amount, but never to the point of suffering. By eliminating salt from the diet as much as possible the amount of fluids may be reduced to two pints per diem. Where we have marked disparity in the hydrostatic balance, our first duty is to reduce the intake of fluids. Sodium chlorid, having a very high osmotic equivalent, should at once be reduced to the lowest possible amount.

Cholagogues should be given, producing watery evacuations of the bowels, and should be continued until the hydrostatic balance is restored or until there are no further indications of dehydration. Turgesence is a positive indication for the reduction of fluids, and in these cases I have seen most happy results from the administration of theophilin in doses of 0.3 grain given three times daily as suppositories per rectum. This may be continued twenty-five or thirty days, as the case requires.

The kidneys are so often involved in cardiac cases I think it imperative that a careful urinalysis be made of every case. I believe with Herrick and Cabot, if the twenty-four-hour quantity and specific gravity of the urine are normal we have good indications to direct us in our treatment.

Alcohol in any form must be entirely eliminated from the diet unless in very exceptional cases. Tobacco cannot be allowed in these cases if we hope for the best results in our treatment. As to the question of tea and coffee the profession is somewhat divided. Some doctors allow patients both in moderate quantities. However, in the majority of cases this is done, I think, as a concession to the taste of the patient and rather against the better judgment of the physician. It is my custom to restrict these absolutely except in cases where caffein is indicated.

Rest is an important factor in the treatment of Bad Nauheim. The village of Nauheim is located at the foot of the Taunus mountains and is one of the most beautiful spots in all of Europe. It is very quiet and restful, where the patients freighted with cares and worries of business or so-

ciety may find very comfortable hotels in which he may be absolutely quiet. There is a beautiful park, with its fine old trees, where the lover of Nature may revel; or he may stroll into the adjacent forest, "Frauenwald," or he may visit the beautiful terrace at the Kurhaus and listen to an exceptionally fine concert by one of Germany's good orchestras. All of the entertainments are of a quiet nature in Nauheim. There is no gaming casino, no race course, no attempt at great society events, every effort is made to keep the place beautiful and quiet, where patients suffering from cardiac troubles may find every thing done to facilitate the beneficial action of the baths. We often find the greatest possible aid to the balneologic treatment in relieving the jaded heart of every possible burden. For this purpose at Nauheim there are roll-chairs provided for the patients that they may go to and from the baths and enjoy the outdoor life without putting extra work on an already enfeebled heart. Endocarditis following acute articular rheumatism or any other cause the patient is kept quietly in bed until the attack is over. Indeed, there are many cardiac disturbances where absolute rest is imperative.

Diphtheria and typhoid fever are frequently followed by myocarditis, which weakens the heart's action very much and where it is very necessary to relieve the embarrassed organ of all work possible. Rest in bed in a recumbent position, where it is possible to carry out, is the ideal rest for a weakened heart, and it is often necessary to enforce the rest for a lengthened period in order to allow the weakened heart to regain some of the reserve force natural to that organ. In cases of cardiac insufficiency absolute rest is the first essential of the treatment, and often a marked improvement is at once noticed when the weakened heart is relieved of part of its work. During an enforced rest extending over any appreciable length of time massage or passive movements are given daily, and during this period the secretory organs are kept active; otherwise the effete material will become dammed up in the system, working more mischief than will offset the good the enjoined rest may accomplish.

Should the blood pressure be high I find it advisable to eliminate the lime salts from the diet, and, if necessary, give some decalcifying agent as sodium citrate, gm. 0.5, keeping the bowels active the while. Exercise in cardiac cases is a question that has received from heart men the widest divergence of opinion, from Oertel and his disciples, who believe in vigorous exercise, even to mountain climbing, ascending quite high altitudes, to those of the other extreme who believe in no exercise save resistant movements. Here, again, one must with great care and caution select his cases.

In patients not advanced in life, suffering from fatty heart, graduated muscular exercise is most beneficial, and after persisting in this exercise for some time the patient is able to take an amount of exercise that in the beginning was impossible. Long walks may be indulged in with comfort and pleasure that before, owing to difficulty of breathing, were impossible. Naturally the diet must be strictly regulated and when all the injunctions are carefully carried out the improvement is often most gratifying.

At Nauheim there are graded walks for patients requiring exercise, on which they may gradually increase the pace, length and degree of ascent until they reach quite an elevation in comfort, always under direct orders from the physician. There is also a Zander institute, with all kinds of mechanical compliances for resistant and passive movements, massage, etc.

The course of treatment at Bad Nauheim usually lasts four to six weeks, and in severe cases patients are advised to return for an after-treatment after a stay in some quiet place for three or four weeks. The selection of such a place must be done with greatest care. Three things are necessary to be considered in such a selection—altitude, quietude, and character of the air. As to the patient, first his particular trouble, his temperament and his method of living. An obligation which should never be omitted is to instruct each patient minutely how he should live, and particularly as to his diet, which should be so regulated as to facilitate the working of the improved heart.

To-day some of Germany's cleverest men are doing serious and commendable work in hydrotherapy. It was not, however, until 1901 that the first hydrotherapeutic institute of Germany was established by the Imperial University of Berlin with Geheimrat Brieger at its head. This has stimulated the work so that almost every university and large hospital now has a splendid hydrotherapeutic institute connected with it. As a rule American practitioners use the baths only as an antipyretic, and this effect is in reality only secondary. Its real value lies in its power to stimulate and increase the resisting capacity of the system against disease. Unfortunately our neglect of this important measure has been due to ignorance of its physiologic and therapeutic action.

Prof. Otfried Mueller of the University of Tubingen is also doing excellent hydrotherapeutic work. While in Bad Neuheim there is a want of scientific clinical data on which to base an accurate physiologic action of the baths, there are thousands and thousands of patients living in almost every civilized country of the globe whose clinical histories prove beyond peradventure their great therapeutic value.

THE RECOGNITION OF EXTRAUTERINE PREGNANCY.*

A. Merrill Miller, M.D.
DANVILLE

The term extrauterine pregnancy is used as descriptive of a conception and growth of fetus taking place without the uterine cavity. The condition was known and described as early as the eleventh century, but its pathology and literature have been developed since the first operation by Tait in 1883.

Anatomically, it may be divided into the following varieties: 1, Tubal, in which the ovum may be arrested in any position from the ampulla to

* Read before the Vermilion County Medical Society, December, 1909.

its uterine extremity; 2, ovarian,[1] which is so rare that authentic cases number less than a score; the most recent was that of Norris,[2] reported in August, 1909; 3, abdominal, both primary and secondary. The former has been demonstrated three times. The last case by Hirst.[3]

While we know little of its etiology, the clinical manifestations make it of vast importance from a diagnostic and surgical standpoint. Many other theories—peritoneal adhesions, tubal polypi, congenital narrowing and obstruction by ova—seem to give way to that of Kussmaul, who holds that the condition is due to stricture of the tube. When we recall the physiologic wave-like motion of cilia toward the uterus, it becomes apparent that a stricture interrupting this current may cause lodgment of the fecundated ovum. The power of locomotion given a spermatozoön by virtue of its ever-active tail might force it along a reverse current or past a tubal stricture through which the fertilized ovum could not be propelled. Williams[4] has found microscopical evidence of preexisting inflammation. Schauta, Küstner, Dührssen believe this to be gonorrheal salpingitis in most cases. It has been frequently observed that periods of sterility precede the occurrence of tubal pregnancy, and the cause of the first is presumptive evidence that a similar event may take place in the opposite tube.

The frequency of ectopic gestation is greater than is usually recognized, and must not be treated as a surgical curiosity. Formad,[5] quoted by Ashton, estimates 1 per cent.; Noble says 3 or 4 per cent. of abdominal sections are made for this condition. Occasionally an extrauterine pregnancy is discovered accidentally before symptoms are manifest. In this event, only care in palpation will avoid rupture and change the condition from an innocent pelvic tumor into a surgical emergency.

When the ovum becomes lodged in its passage along the tube there is first hypertrophy, which later gives way to parietal weakness due to intrusion of chorionic villi. This may terminate in rupture or tubal abortion, but is accompanied by the same general symptoms. Blood is usually found in the free peritoneal cavity in either event, the quantity varying with the intensity and frequency of the hemorrhage. It sometimes occurs when the pregnancy is in the uterine end of the tube that it may rupture into the uterus. The safest place, because of its confinement, is between the layers of the mesosalpinx, the so-called broad ligament hematocele, which Tait says is always due to ruptured tubal pregnancy. In the event of a rupture into the peritoneal cavity, one of three conditions obtains: when not infected, absorption of blood and fetus; the formation of lithopedion, or secondary abdominal pregnancy. Werder, Warren and Reed[6] report cases successfully removed at term.

In the prerupture stage there is cessation, delay or scant menstruation, faintness and morning sickness. The boring cramp-like pain, mild or severe, is due to peritoneal irritation and tubal distention. Rupture of

1. Boldt: Arch. of Diag., 1908, p. 39.
2. Norris: Surg. Gyn. and Obst., August, 1909.
3. Hirst, B. C.: Surg., Gyn. and Obst., October, 1908.
4. Williams, C. D.: Surg., Gyn. and Obst., 1908, p. 519.
5. Formad: Quoted by Ashton.
6. Reed: Jour. Am. Med. Assn., June 20, 1908.

the tube may occur at any time, perhaps most often between the sixth and eighth week. Then the patient's misgiving concerning the above symptoms is usually confirmed. She is apprehensive. Severe cutting abdominal pain with tenderness on pressure in the lower abdomen, corresponding to the point of injury, radiating to the rectum, quickly followed by signs of collapse, justifies her apprehension. The persistent pallor, anxious expression, thirst, profuse clammy perspiration and weak rapid pulse, without fever, in a woman previously well and in the child-bearing period mean ruptured ectopic gestation, if they mean anything, and should make the picture complete to the astute diagnostician. There is only a moderate excuse for any man overlooking this combination of symptoms.

The diagnosis of this condition should be made early if we are to spare the patient a profound shock or perhaps lethal hemorrhage. The presence or absence of a menstrual period is only of relative importance. If a woman has suffered from pelvic inflammation, been sterile for a number of years and passes a period without menstruation, it should receive more than passing notice from her medical attendant.[7] If gross error or carelessness can be eliminated, there is no reason to believe it occurs less often in the practice of one man than in that of another of the same volume. There is certainly no urgent demand for diagnostic yeast to make the condition comprehensive.

It is especially desirable that extrauterine be differentiated from a simple abortion, since curettement might easily initiate a final hemorrhage. The clots of a simple miscarriage appear immediately; the pink stains or tar-like discharges of an extrauterine is due to separation and degeneration of uterine decidua, transformed endometrium, and may not occur for thirty-six hours after the primary concealed hemorrhage. The accident of finding decidual membrane will make the diagnosis absolute.

The local pelvic findings of an abscess or multilocular ovarian cyst projecting into the pouch of Douglas, may be confusing without an aspirating syringe. Its use is a simple and safe procedure, and can be done without an anesthetic. If narcosis is employed especial care must be exercised to avoid rupture in suspected cases. In miscarriage we have only the median tumor, the uterus; whereas in tubal pregnancy there is the median and a second, lateral, enlargement. This mass adjoining the uterus must be treated kindly. It is unsafe to use force or probes or traction forceps, since a careful bimanuel will suffice. In a retroverted uterus the hematoma is found anteriorly, and before examination the bladder should be emptied. I think it is impossible, certainly not essential, to differentiate between clots and fluid blood.

It is unfortunate that the profession entertains widely divergent views as to the necessity and time of surgical interference. The discordant voices are earnest, many of them well informed, and speak with the confidence of those who possess a clear interpretation of the confusing emergency. If any truth has been established as a result of a vast clinical experience, it is that *death seldom occurs during the primary hemor-*

7. Montgomery, E. E.: Keen's Surg., v, 592.

rhage.[8] Frederick[9] says that 95 per cent. of the hemorrhages are self-limited, and that the gravity of the case must determine the treatment selected. Under the expectant plan, adhesions due to the presence of an infected tube or adjacent coils of intestines and perhaps chronic metritis may be the alternative of an operation. Statistics are variable and often useless. The personnel of those operating is such that they are gathered under widely different conditions. Based upon the history and evidence of collapse, the traditions of surgery would indicate an immediate and rational operative procedure. It requires profound convictions to fly in the face of established prejudice, and no plea of expectant watchfulness on the part of an attendant will re-establish a lowered blood-pressure or give color to a blanched cheek after the happy opportunity for interference is gone. There should be a line drawn between conservatism and pernicious death dealing inactively.

In any event, from the history and local findings, there will be sufficient evidence to establish a surgical diagnosis; and "pathologic pride" should not persuade idleness till the safety limit is passed. Rapid operating adds but little danger, and, as Jarvin says, if no extrauterine is found some surgical emergency will be discovered. Shauta says 87 per cent. die without operation, and the mortality is slightly above 5 per cent. in the surgical cases. Without giving statistics to confirm his statement, Sittner[10] says better results are obtained if patient is operated on as soon as a diagnosis is made. Ladinski does not favor expectant treatment, which does not treat. Oliver[11] reports thirty-five consecutive cases operated on without a death. Frankenthal[12] in substance advises operation.

It seems from the above that the question of operating must be decided in the individual patient, and doctor, the only condition being trained assistants and proper selection as to time and place.

THE BABY-TENT IDEA.*

FRANK W. ALLIN, M.D.
CHICAGO.

Organized effort to save the baby is relatively a recent thing. Only a few years ago milk commissions were organized, and the idea spread rapidly until nearly every city now makes some kind of an effort to guard and protect that part of its population living wholly on milk. The mortality was wonderfully reduced, but remains frightfully high, especially where the population is dense. It became apparent that the milk supply was not the only thing to be considered. Since the greatest mortality appeared in the crowded districts, it became evident that more and better air was needed.

8. Baer: Am. Jour. of Obst., lix, 32.
9. Frederick: Trans. Am. Gyn. Soc., lviii, 20.
10. Sittner: Arch. f. Gyn., lxiv, 527.
11. Oliver, James: Lancet, Aug. 22, 1908, p. 527.
12. Frankenthal, L. E.: Personal communication.

* Read at the meeting of the Chicago Medical Society, Dec. 22, 1909.

The fresh-air wharfs of New York City and the fresh-air sanitaria of the lake front were among the first efforts to relieve the congestion of our great cities for the little folk. Sending children to the country for outings and tent colonies for certain diseases had proven so successful in demonstrating the benefits of fresh air that fresh air became one of the important things in the care of babies. Even after the profession had come to see the benefits of fresh air it was hard to convince the mother. But at present, with almost daily articles in the papers and the health department's efforts, it is not so much a question of knowledge as it is to induce the people to act.

Chicago's congested districts are at some distance from the lake front. Most of the deaths of babies in the hot summer months occur within quite limited spaces, particularly on the Northwest Side and the ghetto. The Lincoln Park Sanitarium and the Jackson Park Sanitarium are caring for many babies, but they are inaccessible to a vast majority of Chicago. Mothers with several small children and a sick baby could not be spared from their homes to go several miles and stay all day at the lake front. Consequently the little sufferer remained cooped up at home.

To reach these cases, often dying without ever having a doctor or even a fair chance for existence, the Baby Fresh-Air Tent idea originated. This is to go into the midst of the thickly populated sections and offer what fresh air could be found so near the homes that the mother could bring the sick baby at eight o'clock in the morning, leave it all day in the care of competent nurses, calling for it again at six in the evening. Incidentally, she might be instructed by example and precept how to better care for her child. Like the Salvation Army in their work on the street corners and tenement districts, these tents have left the Lake Shore Drive to reach the masses where they are near their homes.

The equipment of the tents consists of a hospital tent about twelve by sixteen feet, with a double roof, board floor and sides, and screen sides above the chair rail. Each contains eight iron beds, a hammock, electric lights, two electric fans and a telephone. Also a receiving tent, about the same size, for examining, bathing and temporary care of the baby. Milk-commission milk has been used almost exclusively, as a milk depot was maintained at each tent. The tents are opened about July 1 and closed about September 15. The tents were kept open nights and Sundays only in extreme emergency of either very sick patients or severely hot weather, to prevent the usual "blue Monday," for it was noted Monday was the worst day of the week.

A visiting nurse is in charge of each tent, with one or two assistants. And where the work justifies an interne spends all day at the tent. Every day some doctor visits the tent. The days are so arranged that each doctor visits a tent twice a week.

Only patients under about 2 years of age are received, as those older could not be kept in the beds. Only babies of the poor are taken.

When it can be determined through the visiting nurse of the district that the parents are able to pay, they are referred to their family physician. A large proportion of these little sufferers are brought in or sent in by the district visiting nurse. When patients fail to return they are investigated by the visiting nurse.

The baby-tent idea has become so popular that many other cities have taken up the plan and followed more or less closely the plan originated here in Chicago five years ago. New York City was the first four years ago, and she has already outstripped us in number of tents. Cincinnati, Cleveland, Minneapolis, Nashville, Rochester and Hartford are some of the other cities caring for babies in the fresh-air tents.

To one of our own members, Dr. W. J. Butler, belongs the credit of originating the first baby tent. After many discouragements and refusals by the West Park Commission and the City Council, he secured financial aid from the Chicago Relief and Aid Society and a nurse from the Visiting Nurses' Association. This first tent was located at the Northwestern Settlement House, at first in the yard and later on the roof, where it has been for five years. Since that time the United Charities have financed the baby tents. The past year saw many improvements and extensions at a total cost of less than $3,000.

About sixty babies under 2 years of age were cared for that first year. The second year the number was doubled. Each year has shown a growth, until the past summer over a thousand babies were seen. Many of these were not kept in the tent for lack of room.

The total mortality, counting all deaths at the tent or at home or in the hospital within three days after being at the tent, was a little over 2 per cent. The mortality records of former years are about the same, though two years ago it was only 1.9 per cent. Two years ago there were a great many deaths in the tenement district of South Chicago. Last summer a tent was placed in their midst. One hundred and twenty-two babies were cared for without a death. One of the grateful mothers remarked: "Last year it was all the time funerals, but now the babies are all getting well."

The purpose of this paper is to present to the profession a feasible means of getting at one of our great problems of the city—that is, to check the high mortality among infants. The baby-tent idea lays no claim to improving the food supply, as shown in the milk-commission milk, nor to the fresh-air idea, which was in existence long before it appeared. But it has adapted these two great ideas in a way and in the place most needed by scattering tents throughout these congested districts, so accessible that they will meet the need.

The number of babies cared for and the low mortality certainly demonstrates the success of the baby tents and their right to existence and extension to more districts and other cities.

4206 Monroe Street.

DIAGNOSIS OF RACHITIS.*

J. W. Van Derslice, M.D.
CHICAGO.

Rachitis is the most common disorder of infancy and early childhood. In the pediatric clinics held in the larger cities it is found that more than 90 per cent. of patients between the ages of 6 and 30 months show one or more signs of rachitis or of a past rachitis. Nevertheless, the diagnosis of rachitis appears but rarely upon the history cards of patients as filed; on the other hand there is a decided emphasis placed upon this condition in much of the literature, and the diagnosis is a very frequent occurrence in general practice. Why, then, is this diversity of diagnosis between the pediatric clinicians and the clinicians of general medicine? Certainly it cannot be that the trained pediatrician does not so readily recognize this condition as does the man in general practice. The cause must be in the interpretation put upon the findings or a different understanding as to the identity of the condition. It is to point out the condition that the pediatrician understands as the symptom complex of this pathologic entity that this paper is written.

This definition is set down in most of the text-books: Rachitis is a condition of mal-nutrition affecting all structures and systems of the body with characteristic defects of nutrition, chiefly manifested in the bones. It is this last phrase of the definition that has caused the many errors in the use of the name. Rachitis is a dystrophy, therefore a constitutional disorder, and though the chief macroscopic and known microscopic changes do affect the bones, there are other changes which are as constant as those of the bone growth. With the word rachitis there is indelibly associated this so-called softening of the bone, and it follows that the inexperienced are apt to rely upon these changes only as the basis for diagnosis of the condition. On the other hand the trained pediatrician does not rely upon the enlargement of the ends of the long bones or upon any of the myriad of changes and deformities that may ensue from an attack of rachitis for his diagnosis, but rather depends for the diagnosis upon the symptom complex which goes to make up this disorder.

The usual clinical history of rachitis is that the child is restless, more or less fretful, the sleep is disturbed, the child shows a tendency to throw off the coverings, there is a slight rise of temperature, especially at night; with this there is the tendency to profuse perspiration about the head and face. On picking the child up after a sleep it is noticed that the pillow is wet and the perspiration stands in beads upon the forehead. Hand in hand with this, there is a general tenderness. The child repels advances, manifesting a desire to be let alone. If a careful inquiry is made, it is found that the child has had some disturbance of digestion. There is flatulence, frequently large, foul-smelling bowel movements, with either diarrhea or constipation. This indigestion is always present. That more stress has not been laid upon it is because the disorder is not a summer disorder, *per se,* but is met with more frequently in the winter. The

* Read at the meeting of the Chicago Medical Society, Dec. 22, 1909.

summer diarrheas frequently usher in an attack, but as these attacks are usually acute and severe the diet is immediately changed, while in the low-grade disorders of the winter a mild indigestion is allowed to continue indefinitely. The symptoms attributed to the nervous system are many. The restlessness is frequently accompanied with head rolling, which wears away the hair, leaving the occiput bald. Intercurrent attacks of night terrors, laryngismus stridulus, tetany and general convulsions are not uncommon.

The musculature is weak and flabby; the child does not find his legs. If the attack occurs in a child that walks, he goes off his feet and must needs learn to walk again. The nutrition of the child is variable. Many of the cases are in children that are fat and plump. This is especially true in children that are on a high starch diet. In other cases the child is puny and thin. In the well-marked cases there is usually some degree of anemia, but this is neither marked nor characteristic. The findings are those of a secondary anemia.

The above clinical history occurs in the majority of cases before any changes occur in the bones which can be demonstratel clinically. There may be a persistence in any or all of the symptoms until the characteristic bone changes are manifested, but such is not necessarily the case. The bone changes do not occur in the early history, but are of slow development. The changes in the bones are prone to occur in those bones which are making the most active growth and are performing the more active service at the time of the attack. From this it is readily seen that in those cases occurring in early infancy the ribs bear the brunt of the attack, and it is found that the ensuing deformities are largely limited to this area, as the rachitic rosary and the horizontal depression corresponding more or less closely with the attachment of the diaphragm—the so-called Harrison's groove. The cases occurring a little later are characterized by deformities of the upper extremities; this in turn is followed in the later cases by the involvement of the lower extremities with bow-legs, knock-knees, etc. The head shows changes in the cases of medium and severe grade. The teeth are affected, both in their development and in the time of their eruption.

As stated above, there is always a disturbance of digestion. This is usually of a catarrhal form. This tendency of the alimentary mucous membrane to catarrhal disorders is also manifested by the mucous membrane of the respiratory tract, so that clinically it is found that many of these children develop disorders of the upper air passages. It is not within the province of this paper to go into detail in regard to the various deformities which are common to this disorder.

The chief object of this paper is to call attention to the misuse of the term rachitis as applied to the resultant deformities of an attack of rachitis rather than confined to the disorder itself. The term rachitis should be used only for that symptom complex above described, and not to resultant deformities. The misuse of the term is now so general that in the use of the word it has become necessary to qualify it by a phrase indicating of what phase of the disorder one is speaking. The

term acute rickets is now of more or less general use, but this is not applicable, as the disease is an insidious disorder, running an indefinite course, and as there is no clinical entity which may be classified as chronic rachitis. At just what point in the disorder it can be said that the disorder has ceased, and that one is dealing with the results only, may often be a debatable point, but it is obvious that in many cases of so-called rickets the disorder has long since been overcome. This point may need some emphasis, as in the history cards sent out by various departments of health there is found this question: Has the child rickets?

It may be set down dogmatically that rachitis is a dystrophy, usually occurring between the sixth and twenty-fourth months, the symptoms of which are digestive disturbance, restlessness, profuse sweating about the head and face, especially during sleep; in severe cases, general tenderness, and with these there occur manifold changes in the various systems of the body, with most marked macroscopic effect upon the bones.

The infrequency of the diagnosis of rachitis in the pediatric clinics is not the result of failure to recognize these changes, but rather because the child is not brought for advice during the attack, but is brought for some of the effects. These children are brought at the ages of 18 to 24 months, because they have failed to walk, or at 12 to 14 months for failure to sit alone, or because the eruption of the teeth is delayed, or for flat-foot or bow-legs. These are the results, not the disease, and bear the same relationship to the disorder that the remaining deformity bears to an old fracture. The limitation of the use of the term rachitis to the symptom complex above described may meet with some criticism. It is obvious that clinically it is impossible to state at what time the dystrophy ceases, but this is a distinct advance over those dogmatic methods which aver that a child whose teeth have not erupted by the twelfth month, or one whose anterior fontanelle has not closed by the eighteenth month, has rachitis.

A SURVEY OF INTERNATIONAL MOVEMENT CONCERNING INFANT WELFARE.*

ISAAC A. ABT, M.D.
CHICAGO.

During the last half century, which has been a period of marvelous progress in medical science, human life has been prolonged for the general population, though infant mortality continues much as it did in former times. Indeed, in many places they die in greater numbers and more readily than in the past. In England and Wales the infant death rate is stationary, notwithstanding the fact that there has been an enor-

* Read at the meeting of the Chicago Medical Society, Dec. 22, 1909.

mous improvement in sanitation and standards of comfortable living. Statistics of these communities show that one infant in six dies before it is 12 months old.

The birth rate is declining in all civilized countries. Attention has been called to the declining birth rate in France, but the condition is not peculiar to the latter country. The causes of this diminished birth rate are associated with the onward march of civilization. Women of the higher classes refuse to undergo the drudgery of oft-repeated pregnancy and the care of large families. They have social ambitions. There are many other causes for the declining birth rate, both physiologic and economic, which need not be discussed at this time.

Diseases of infancy are relatively much more frequent in cities than in rural districts. Density of population, combined with social and industrial conditions, exerts an unfavorable influence on infant life. Overcrowding, insanitation of the poorer quarters of larger towns, domestic uncleanliness, poverty, deficient or improper nourishment, ignorance and neglect are all common features of city life, especially among the poor. Mothers who are factory or shop workers play an important rôle in piling up the infantile death rate.

The problems of prevention in infant mortality are not new; the difficulties have not been confined to any one community. The same difficulties that have arisen in the cities of Germany, Italy and Austria have presented themselves here in America. The difficulties are universal and international. In those communities where new laws have been enacted and new projects launched, it is soon found that they are deficient, that they do not cover the situation and are unsatisfactory and require modification. Thus we are making history and making new experiences.

In nearly every country of Europe during the last few years laws have been enacted in the various legislatures looking toward the protection of infants against the extreme mortality. In 1908 the English Parliament enacted the children's bill. In Italy the House of Deputies is considering a law for the prevention of infant morbidity and mortality. In Sweden a committee has been appointed by the legislative body for a revision of laws relating to the care of asylum infants. Similar action has been taken in Austria and Russia. In France, where the first attempts were made to bring about a new order of things, so far as the matter of infant welfare is concerned, we find that the enactments which were created last year are deficient and unsatisfactory for a subsequent year. Thus it is seen at a glance that the movement is international; that the nations of Europe are awake to the excessive mortality which prevails, and also that the solution or the remedy is beset with the greatest difficulties, and that a perfectly satisfactory plan of action has not been evolved.

It must be admitted that it still remains to be settled in what manner the high infant mortality may be conquered. There are many gaps in our medical and scientific data. We must, for the present, differentiate two working forces: First, the social problems, those which may be corrected by charitable, economic and legislative means; and, second, those which

depend upon medical knowledge and upon the laws of infant hygiene and nutrition. As a matter of fact, it is difficult to separate the two, and, if the crusade is to be effectively waged, both means of attack must be resorted to.

Budin, in 1892, organized his consultations for nurslings. Mothers who were delivered in the clinic brought their infants back every week to be examined and weighed. A special register was kept, where all data concerning each infant were recorded. Budin insisted on breast feeding; even where the milk was deficient he encouraged mothers to nurse the babies. The mothers received directions as to the care, hygiene and feeding of the babies.

In 1894 Dr. Dufour, of Fecamp, started a consultation for nurslings, calling his institution Goutte de Lait. The function of Goutte de Lait was to give to mothers all possible advice and encouragement in the suckling of their infants. In those cases where breast feeding was not possible, Dufour distributed diluted or modified cow's milk. All infants in the town of Fecamp are admitted to the benefits of the consultation. They are separated into three classes: (1) A free section, (2) a partial paying section, (3) a paying section. The first comprises infants of the poorer classes, the second those of the artisan class and the third those of the middle and upper classes. All receive the same kind of milk, prepared in the same manner.

Many towns in France have consultations for nurslings, and a diminution in infant mortality is being experienced wherever the consultations for nurslings make their influence felt.

Professor Arthur Kellar instituted the first systematic crusade against infant mortality in Germany, in the city of Magdeburg, in 1905. A year before (1904) the town authorities of Magdeburg organized a municipal milk plant for infant food. It was soon found that the maintenance of institutions for the prevention of infant mortality by private associations was a very expensive undertaking, and in 1907 it was found necessary to close the institution until spring. This led to the municipalization of the entire project. The city authorities divided the work into several departments and passed enactments for their operation.

In April, 1908, the Infant Welfare Association of Magdeburg was created, with a special tax to defray the cost. The association includes: 1. Awarding of premiums to mothers who nurse their infants. 2. The distribution of clean, pure milk to homes for infants' use at a moderate price. 3. Supervision of all illegitimate and abandoned infants by regularly appointed physicians and nurses. 4. The organization of professional guardianship.

The Organization.—The management of the organization at Magdeburg was given over to a special committee. The president was the director of the Municipal Charity and Orphans' Board. The members of the board consisted of the city pediatrician, the supervisor of orphans, three councilmen and one woman. The detailed administration fell to the president of the committee. The medical direction fell to the physician. Both worked together harmoniously, as they should.

The real welfare work is strictly centralized. The children's specialist is in control; under him work five nurses. The city is divided into five districts; to each district a nurse is assigned. A physician also spends an hour a week in each district for consultation with mothers and nurse.

Premiums for Nursing of Infants.—Prizes in money are offered to women who nurse their babies. This money enables some poor women who are not receiving sufficient food to supply themselves with the necessities. It also enables some women who have been working in the shops to remain at home and care for their infants, and, lastly and most important, it is a breast-milk propaganda, as this plan emphasizes that breast milk is the best food and that the natural plan of feeding is associated with a minimal amount of sickness and a low mortality. Teaching the superiority of breast milk as infant food should be the highest function of every infants' welfare association.

Married women in Magdeburg whose husbands earn 1,200 marks ($300) per year are allowed to partake of premiums: 1. The premiums are awarded, as a rule, from the beginning of the seventh to the fifteenth week. 2. At first 1 mark (25 cents) per week, and in two weeks 1.25 marks is allowed. After three weeks 1.50 marks per week is allowed. 3. In the severe summer weather as high as 2 marks premium per week is granted. 4. The conditions under which premiums are paid are that the mother should bring her infant to the consultation room regularly and that she agree to follow the directions of her physician. 5. The premiums are paid only on the order of the physician, who satisfies himself that the infant is being breast-fed.

The Infant's Milk Supply.—Perhaps no more important problem presents in an infant welfare campaign than a properly supervised milk supply. Notwithstanding the breast-milk propaganda, some mothers cannot nurse their infants; some can nurse them only for a short time. Clean, certified milk is not always within the reach of the poor. Properly pasteurized milk, diluted or modified, is the safest substitute, as can be proved by abundant experience.

Medical Supervision.—The medical supervision should begin with the birth of the infant. The physician should give sensible advice to the mother and nurse about the ordinary problems which arise. The supervision is carried out by the nurse's visits at the home and at the physician's consultations. The medical consultations are of vast importance. They should be conducted by physicians who have special experience. Physicians should display tact and great patience. The nurse at Magdeburg is requested to talk over her cases with the medical director.

Budin, the originator of the modern consultation for physicians, says that every baby's consultation station is worth as much as the physician who conducts it. In other words, the medical man should have requisite knowledge, an insight into the conditions of the poor, endless patience and interest and enthusiasm in the matter of infant welfare.

Asylum and Hospital Care.—Infants' asylums have been in the past notorious. Every physician knows that some asylums furnished a mortality of 80 to 100 per cent. Unfortunately, some do even to this day.

Many reforms have occurred. The mortality has, for the most part, been diminished. The nursing and care have been vastly improved, and the infants are largely nursed by the mother or a wet nurse. The results in any infants' hospital or home depend, according to Kellar, upon: 1. The construction of the wards. 2. The organization, management and duration of stay in hospital. 3. The capacity and ability of manager, physician and nurses. 4. The character of materials for work placed at the disposal of the staff. 5. The wet-nurse situation—that is, the possibility of securing breast milk for infants.

A competent, interested, diligent medical man is the greatest asset of an infants' hospital. A well-organized nursing system, with a sufficient number of nurses, is equally important, if the mortality rate is to be kept within desirable bounds. In addition to saving the babies, the infants' hospital should become the educational center for the propaganda of sensible ideas concerning infants' care—the promulgation of the gospel of breast-feeding, of regular hours for feeding and sleep, of cleanliness of house and person and of all other well-founded facts which make for healthy babies. It is necessary to break down old traditions, which are deep-seated in the minds of grandmothers, neighborhood sages and midwives.

SCHLOSSMANN'S INFANTS' HOSPITALS AT DRESDEN AND DÜSSELDORF.

Schlossmann is widely quoted as saying that an institution or department of a general hospital for infants, according to the present status of medical science, has no excuse for existence unless it supplies wet nurses and breast milk for its infants. Equally appropriate are the words of Salge: "It cannot be too frequently repeated that an infants' hospital without wet nurses is an impossibility. One might as well build a surgical hospital without an operating room." Schlossmann has developed a special technic in the management of wet nurses. He finds that the quantity of milk is increased in proportion to the degree that the breast is stimulated. Many women lose the breast milk because the breasts are not emptied after nursing. The wet nurses are taught to milk the breasts by hand, and they acquire in a short time great facility in this manipulation. In following this plan, both at Dresden, his former station, and at Düsseldorf, his present clinic, he is enabled to report a low mortality rate for his infants. Schlossmann conducts a model infants' hospital, with a sufficient nursing force, well-ventilated wards in both summer and winter, out-of-door life in the summer time, a well-supervised milk supply and a milk kitchen or laboratory for the preparation of milk for well infants.

DAS KAISERIN AUGUSTE VICTORIA HAUS.

Most interesting of all is the recently built Auguste Victoria Haus at Charlottenburg, near Berlin. In commemoration of the twenty-fifth wedding anniversary of the Kaiser and Kaiserin, large sums of money were raised throughout Germany, the royal pair heading the list with a large subscription for the erection of this institution.

This hospital has assigned to itself the following tasks:

1. To investigate the practical and scientific problems pertaining to the welfare of the infants, as well as the mothers.

2. To collect material and statistics concerning the organization and management of infant-welfare problems.

3. To promulgate, by means of publications, facts and figures concerning welfare of infants and mothers. To advise with municipalities, public and private organizations, as well as individuals, who are seeking knowledge concerning infant morbidity and mortality.

Pregnant women will be admitted into the hospital months before they are to be confined, and depart months after they are confined, so that the physiology and pathology of pregnancy and the influence of pregnancy upon development may be studied. Also that the development of the infant may be studied from the beginning until the end of lactation. The obstetrician and the child's specialist will probably for the first time work together, which has been a long-felt want. The sick breast-fed baby will be studied alongside the baby who is sick and fed upon artificial food. An out-door department and consultation is to be conducted in connection with the hospital.

A milk laboratory and a hygienic stable for milk animals (cows, goats and asses) is provided for. In this way the milk supply may be controlled and the milk conditions carefully studied. A well-equipped laboratory and library are also provided for by the hospital. Physicians, medical students and nurses will receive instruction in the wards and laboratories. The Auguste Victoria Haus is under the medical direction of Professors Keller and Langstein, who are equipped by training and experience to initiate a new era in the solution of the numerous and difficult problems. This hospital will be a central station, and will, in fact, be in charge of the sauglings fur-sorge movement for all Germany.

EXPERIENCES IN ENGLAND.

So far as available reports show, no widespread attack on infant mortality has been made in England, such as is witnessed on the Continent. In 1907 a notification of births act was adopted, so that the birth of each child is notified within a few hours of its occurrence and a watchful eye can follow the infant's progress. The infant life protection act enacted by Parliament in 1909 provides that the destruction of a child's life during birth will be punishable as a felony, with a penalty of life imprisonment. This latter legislation was rendered necessary because the suspicion was growing that newborn illegitimate children were being unfairly dealt with during birth.

The infant life protection act was passed by Parliament in 1897. This law makes it obligatory to register all houses receiving for hire or reward more than one infant during a period of more than twenty-four hours. This law, however, did not have the desired effect. In 1908 Parliament passed the children's act, which requires that when a child is received into such a home notice shall be served in not less than forty-eight hours. In addition, infant protection visitors are appointed. Their duty is to visit the infants and the premises at which they are kept, to satisfy themselves as to their proper nursing and maintenance and to give any necessary advice. Within the past few years many associations have been formed for

the protection of infant life; the movement is only in its beginning in England.

The Westminster Health Society distributes leaflets and makes house visits through a staff of voluntary lady visitors who have received some training. Mothers are visited before the baby is born, and after birth of the baby the visits are renewed. The practical side of these visits is apparent; infant mortality is too often a domestic problem; infant mortality is highest the world over where filth, ignorance and carelessness are the most rampant. In many English cities outdoor consultations for nurslings have been established.

Here in America the necessity for action confronts us, but we are still standing at the threshhold. High grade, clean milk may be had in most of the cities, but its price is prohibitive, so far as the poor are concerned. In New York, Chicago and other cities modified and pasteurized milk is distributed, bottled and ready for feeding to infants. The babies' hospital in New York, with its training school for nursery maids, under the direction of Dr. Holt; the great activity of the New York Health Department in the manner of inspections, leaflets of instruction; the organization of a bureau of child hygiene, mark the beginning of better things, and, it is to be hoped, a lower mortality.

In Albany, N. Y., Dr. H. L. K. Shaw conducts an infants' hospital, with a training school for nursery maids, which is second to none, and in Boston is the Thomas Morgan Rotch, Jr., Memorial Hospital for Infants, under the direction of Professor Rotch.

In July, 1906, Dr. H. J. Gertstenberger organized a dispensary for infants in Cleveland. It is modeled after the French consultations and the German stations. Pure milk is distributed and medical advice and instruction given to mothers in such details of care and feeding as may be required for preservation of health and prevention of illness. Visiting nurses are also sent from the dispensary to the homes of the little patients for the purpose of rendering aid, carrying out instructions, caring for the food and putting the house in hygienic order.

More recently philanthropists, physicians, health officials and others met in national congress at New Haven to form a National Association for the Prevention of Infant Mortality. It is hoped that from this new association a new light and energy will emanate which will result in better living conditions for the infants of all classes and a lowered infantile death rate, particularly among the poor.

THE COMPLETE EXCISION OF THE TONSIL.

J. Whitefield Smith, B.Sc., M.D.
Ophthalmic and Aural Surgeon to the Brokaw Hospital.
BLOOMINGTON, ILL.

The author of this paper is aware that there is no "best method" for the complete removal of the tonsil, any more than there is a "best method" for the successful execution of any other work in the domain of art. Whatever method has been used and found helpful for one may not appeal to another, so when we consider the method employed or the man-

ner of surgical procedure for the complete excision of the tonsil it becomes largely a matter of personal preference, based upon individual experience and practice.

This field of surgery has been brought prominently before the American surgeon during the last year, and much valuable literature has appeared on the subject, yet it may not be uninteresting or unimportant to further emphasize some phases of the splendid technic presented or to mention some other facilities that have suggested themselves from experience or of necessity.

Before one should ever attempt to remove a tonsil he should have, at least, a comprehensive idea of its anatomic relations, and then the details of the surgical procedure will be intelligent; otherwise the attempt as well as the result will be vague and uncertain. To this end a brief description of the relationship of the tonsil to the contiguous structures may be helpful in the further presentation of the subject.

Anatomic Relations.—The tonsil is located in the tonsillar fossa, one on either side of the fauces, between the anterior and posterior pillars of the soft palate. The oro-pharyngeal surface is covered with a mucous membrane; it contains follicles or crypts, which are also covered with a mucous membrane, lined by stratified epithelium. There are about twelve or fifteen crypts which penetrate deeply into the substance of the tonsil. Exteriorly the tonsil is in relation with the connective tissue interposed between it and the superior constrictor muscle of the pharynx; this muscle separates the tonsil from the internal carotid and ascending pharyngeal arteries. Anteriorly the tonsil is in relation with the palato-glossus muscle, which forms the anterior pillar. This muscle becomes thinner as it approaches the inner aspect of the tonsil, forming a delicate fold of mucous membrane in front called the plica triangularis, or the plica tonsillaris. Posteriorly the palato-pharyngeus muscle forms the posterior pillar of the fauces, which is situated immediately behind the tonsil. A fold of mucous membrane covers the posterior portion of the tonsil in this relation. Above the anterior and posterior pillars unite, forming a covering for the velar lobe, above which is a small recess or space known as the supratonsillar fossa. Below a reflection of mucous membrane covers the lower portion of the tonsil, and is adherent to it in the form of a fringe.

It will be seen from this description that the tonsil is located in a triangular interval or space between the anterior and posterior pillars, the former extending downward, outward and forward; the latter downward, outward and backward. Furthermore, the tonsil is contained within a fibrous capsule, composed of connective tissue, extending externally from the free margin of the pillars, covering its surface. The remaining portion of the tonsil is covered with a mucous membrane on its oro-pharyngeal surface, extending internally from the free margin of the pillars.

Surgical Instruments.—There are a number of useful instruments used successfully by many operators for the removal of tonsil. Those herein described are the ones I employ, which suit my convenience.

Anesthesia and Position of Patient.—Without entering into a description of the preparation of the patient, or of the instruments, or the hands of the surgeon, we shall proceed at once to describe the steps of the operation *seriatim*, presuming the operation to be performed under general



Fig. 1.—The author's tongue-depressor. Since the tongue consists of two symmetrical halves, the tongue depressor is made with two long narrow openings, one on either side into which the lateral halves mold themselves, and thus prevent the tongue from slipping.



Fig. 2.—The author's tonsil forceps. The jaws of the forceps extend in a straight line with the shaft of the instrument, and are not turned at an angle as most tonsil forceps are. The advantage of this is, that in the use of the instrument, the forceps are applied in an extended direction, rather than by lateral pressure, and in this way one may direct the movements with greater accuracy and precision, and at the same time exert whatever force is required with less difficulty. The teeth of the instrument are round and smooth and do not tear out, nor lacerate the tissues when traction is made on the tonsil as some forceps do. Both finger grips are elongated and left open so the ring-knife of the tonsil snare may be readily passed over them.



Fig. 3.—The author's pillar knife. The shape of the blade is elliptical; one edge is very keen for sharp dissection, while the other is finely crenated for blunt dissection. This knife is used to dissect the plica tonsillaris, and the pillars from their tonsillar attachments.



Fig. 4.—The author's curved tonsil knife. This knife is used in dissecting out the velar lobe, and in freeing it from its attachment to the palate.

anesthesia. The patient should be placed on his back upon the operating table. The table should be about forty to fifty inches in height, suiting the convenience of the surgeon, who should be seated at the side so as to have a commanding view of the interior of the patient's mouth. The illumination of the field of operation should be from a head mirror.

The patient being thoroughly anesthetized, the head should be lowered to prevent the aspiration of blood or other foreign substance, and the face, being near the edge of the table, should be directed toward the surgeon. In order to render the field of operation as bloodless as possible,

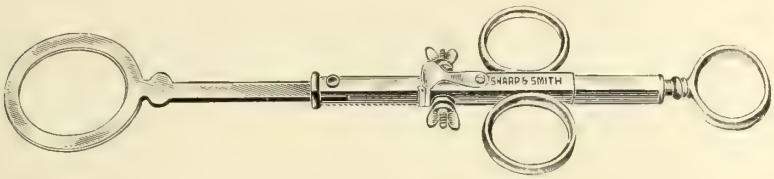


Fig. 5.—The author's tonsil snare. The tonsil snare is constructed as follows: A square shaft of steel four inches long, supports a carriage which is supplied with two finger rings. On the proximal end of the shaft is a finger ring with a swivel attachment; near the other end of the shaft are two thumb-screws for holding the ends of the wire used in the snare. One side of the shaft is notched and the carriage is supplied with a spring, controlling a ratchet that works in the notches, so that when the carriage is stopped at any point it will be locked. On the distal end of the shaft is a deep mortise into which the end of the handle of the ring-knife is inserted. This handle is held in position by a set screw. The ring-knife consists of two symmetrical blades, placed side by side, and made in such a way that there is a small groove around their circumference, in which is placed the loop of wire. In use the ring-knife is placed over the greatest circumference of the tonsil, and the loop of wire is drawn between the blades, squeezing out or extruding the tonsil at the same time cutting off the unsevered attachments.

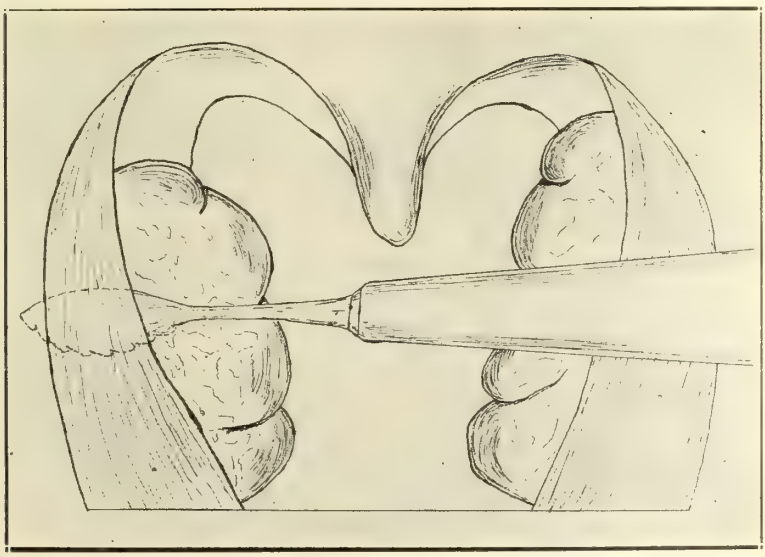


Fig. 6.—(Schematic.) The illustration shows the use of the "author's pillar knife" in dissecting the plica tonsillaris and pillars from the tonsil. The keen edge is first used to free the marginal attachments, then the crenated edge is used to further separate the tissues, and to pass around the tonsil freeing it from the attachments of connective tissue fibers by means of blunt dissection.

and at the same time to assist in abolishing the deep pharyngeal reflexes, the surface of the tonsil and the tonsillar region should be painted with 5 or 10 per cent. cocain in a solution of adrenalin chlorid (1-1000) by means of a pledget of cotton on the end of an applicator.

SURGICAL PROCEDURE.

1. A mouth gag is carefully inserted in the mouth, between the jaws, to hold them well apart.

2. The tongue depressor (Fig. 1) is next introduced, which should bring the tongue well down in the floor of the mouth, thus affording more room for the operation.

3. The tonsil should now be firmly seized with a vulsellum forceps (Fig. 2), the lower jaw of which should be placed deeply in the inferior pole, while the other jaw should be inserted in the superior pole, well into the supratonsillar fossa. In this way the tonsil is "fixed," and at this stage of the operation it should be simply steadied, without any traction being made upon it.

4. The next step of the operation consists in freeing the membranous attachment and the pillars from the tonsil. The plica triangularis or plica tonsillaris, together with the anterior pillar, is dissected from the tonsil with the pillar knife (Fig. 3). Also the mucous membrane, together with the posterior pillar, should be dissected in a similar manner; then the velar lobe should be carefully dissected out with the curved tonsil knife (Fig. 4). In order that this may be accomplished to the best advantage, firm and gentle traction should be made on the tonsil inward and downward until the velar lobe presents, when it can be severed from the supratonsillar roof. The tonsil, being practically "circumcised," is now ready to be completely removed from its bed.

5. This is effected by making strong traction, in the direction as above, at the same time with slight torsion. Ordinarily the tonsil is easily luxated and is readily brought out into the throat.

6. The tonsil, having been drawn well toward the median line in the throat, is made to engage the ring-knife of the snare (Fig. 5), which is passed over the line of its greatest circumference when the loop of wire is gradually tightened, gentle traction being made on the tonsil at the same time. Instead of the wire-loop cutting through the base of the tonsil, the tonsil is extruded or forced out through the ring-knife of the snare coming away *en masse* in its capsule.

Results.—Ideal results in this field of surgery can only be obtained by the employment of rational methods in which we are enabled to more nearly perfect our technic. In cases of hypertrophy of the tonsils, in which they extend beyond the plane or level of the anterior and posterior half-arches of the palate, projecting well into the throat, embarrassing the respiration and inducing to a certain extent oxygen starvation, modern surgery requires their complete excision.

The accomplishment of this, in order to obtain the best ultimate results, would contemplate the complete removal of the tonsil in its capsule; the least amount of traumatism; the minimum amount of hemorrhage; and the least amount of disturbance to the peritonsillar tissue.

The first condition is met in the technic described by the careful dissection of the mucous membrane attachments from the tonsil, which, as has been said, amounts to practically "circumcising the tonsil." The next two conditions are complied with in the use of the tonsil snare. The

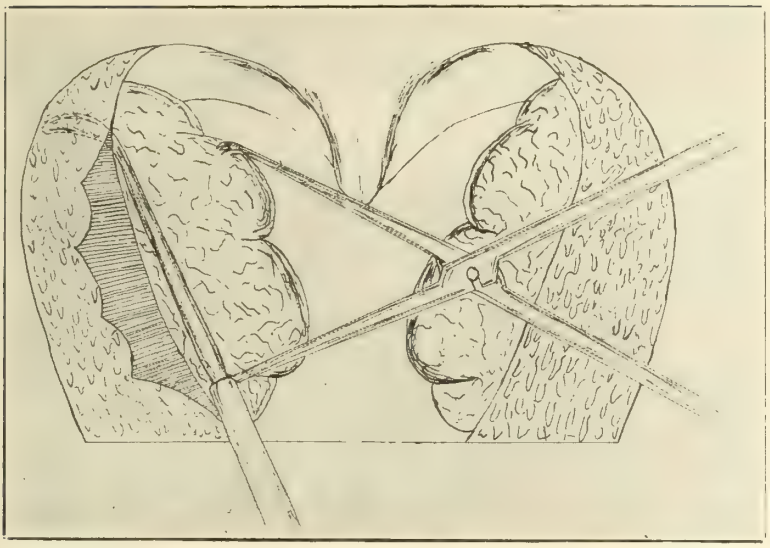


Fig. 7.—(Schematic.) This illustration is used to show the use of the author's curved tonsil knife in dissecting out the "velar lobe," after the plica tonsillaris and the pillars have been separated from the tonsil. The tonsil being drawn downward and toward the median line of the throat, the supratonsillar attachments are freely dissected so that this portion of the tonsil may also be included in the grasp of the snare in the complete excision of the organ.

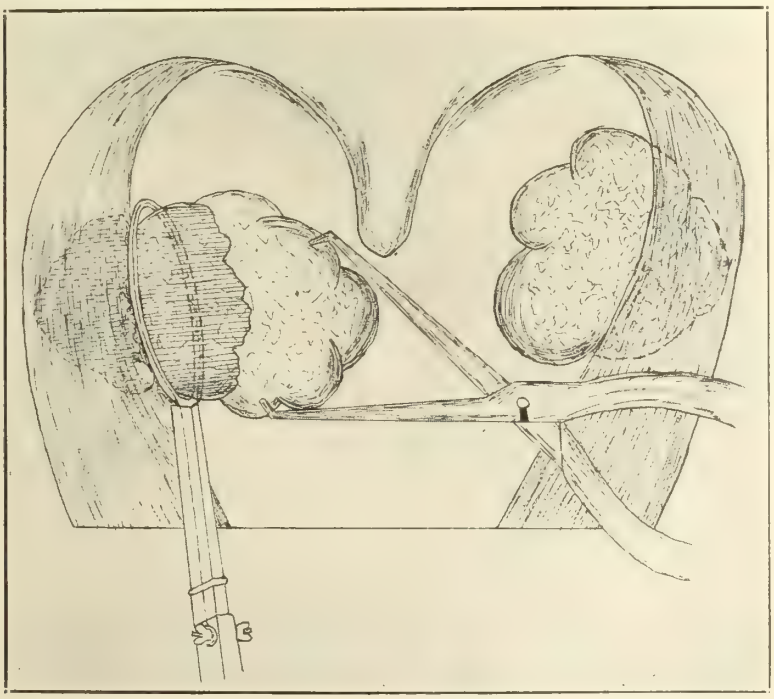


Fig. 8.—(Schematic.) The above illustration represents the use of the "author's tonsil snare." After the tonsil is separated from the plica tonsillaris, pillars and the supra tonsillar roof, the snare is passed over the vulsellum and over the greatest circumference of the tonsil; the loop of wire is drawn between the engaging blades of the snare and tightened upon the base of the tonsil, at the same time traction is made upon the tonsil by the forceps, and the tonsil is excised, passing out through the ring-knife of the snare.

vessels, being crushed, do not bleed so freely nor profusely as they do on incision by a blade with a keen edge. Also, in the application of the ring-knife of the tonsil snare, the broad surface of the blades pushes the surrounding tissue of the tonsil well back so that it is not included in the loop of wire, and hence is not injured.

Conclusion.—If it be true, as has been said by some of the authorities in the field of American surgery, that "the tonsil is accountable for more diseases of the body than any other gland or organ and that 5 per cent. of all affected tonsils are tubercular," it becomes at once a subject that should engage the attention of every physician and surgeon.

The danger arises, no doubt, from the fact that all food and drink and the air, both in inspiration and expiration, are brought into contact with the tonsils. They stand at the entrance of the roadways leading to the important organs of nutrition and respiration, and in disease contaminate and infect all that pass by these portals; and likewise are affected by all that pass over their surfaces. Hence, if the tonsils become a source of infection, and poison the food and drink and the air we breathe, it is only reasonable to suppose that all the functions of life will be modified and impaired.

The treatment, then, should look forward to relieve or remove this condition; and it is very well agreed among surgeons to-day, and especially those who are particularly engaged in diseases of the throat, that the best ultimate results and permanent benefit can only be accomplished in the *complete excision of the tonsil.* Methods, of course, differ, but in ulterior results there seems to be almost a unanimous opinion. The technic and instrumentation herein presented have been found handy and useful in the method which I have described.

Griesheim Building.

ARTERIOSCLEROSIS OF THE URINARY BLADDER.*

G. Kolischer, M.D., and H. Kraus, M.D.
CHICAGO.

The advanced knowledge of the inflammatory changes in the bladder and of urinary obstruction, and the satisfaction derived from the good results in treating these conditions, concentrated the attention of the genitourinary men, preferably on these points, detracting somewhat from the recognition of other vesical pathology. But in order to avoid diagnostic errors and the subsequent inappropriate surgical measures, it will be important to investigate and recognize with thoroughness other conditions which cause symptoms that are apt to lead the superficial observer into erroneous conception of the existing disease.

It is the intention of this paper to call attention to a not infrequent pathologic condition of the urinary bladder that originates in changes of the blood supply of the walls of this organ. This condition is not

* Read at a meeting of the Chicago Medical Society, Dec. 29, 1909.

based on a microbic invasion of the bladder wall from the vesical mucosa, but on the influence of certain *noxæ* that first attack the whole system. This pathologic and clinic unit is atheromatosis of the arteries of the bladder wall. This hardening of the arteries in the bladder wall will cause a complex of symptoms that point to disturbances in the bladder, which, after careful analysis, cannot be explained in any other way than by pathologic changes in the vesical arteries.

One of the symptoms is that for some parts of the day the patient is constantly conscious of his bladder, while again intervals occur during which this sensation is entirely absent. At certain times of the twenty-four hours, preferably shortly after meals, even if no beverages, alcoholic or others, were consumed, the urinary calls become more frequent, and when once perceived are imperative. Sometimes quite severe pains, often of a lancinating character, are perceived in the bladder and in the regions surrounding it; micturition is sometimes painful, especially if the bladder is considerably distended. All this will be observed, although no inflammatory changes can be found. It furthermore has to be mentioned that, in contradistinction from the character of inflammatory processes, all these phenomena are of a transitory, although recurrent, type. While in cases of prostatic hypertrophy the warmth of the bed leads to an increased frequency of the urinary calls, in cases of atheromatosis of the bladder the repose in bed and the warmth thereof make the bladder decidedly restful.

An objective symptom of prominent character is occasional hemorrhage of an arterial type into the viscus. The hemorrhage is profuse and the blood is of a light red color. These hemorrhages quite often occur into the just previously emptied bladder, and are sometimes so copious that in a very short time the viscus is filled and distended with blood, so that again an urgent desire for emptying the bladder is excited. The voided fluid is almost pure blood, in the main in liquid condition, with some scattered coagula floating around in it. In case these coagula reach considerable size, their passing occurs, accompanied by considerable tenesmus and under forcible straining. There is no doubt that some of the cases of hemorrhage into an instrumentally emptied bladder, known as *ex-vacuo,* are due to the atheromatous conditions of the superficial vesical arteries.

Any excess in eating, drinking, or unusual physical exertion, always results in producing a vesical attack, which consists in the appearance of but one, several or all the symptoms enumerated above. Venereal excesses have also to be counted among exciting *noxæ,* but continued total abstinence quite often leads to increased excitability. It is nothing unusual, for instance, to observe painful attacks after erotic dreams or after nocturnal emissions.

A cystoscopic examination of such bladders shows arteries running through the mucosa and standing out in relief very distinctly. These blood vessels show an unusual thickness; their contours are sharply outlined, their course is meandering and their aspect gives the impression of rigidity. Sometimes the eye even catches the spurting of a thin

stream of blood from the walls of such a thickened artery. In some instances, if cystoscopy is performed shortly after a hemorrhage, a coagulum might be seen, attached with its thicker end to the wall of a blood vessel, while its thinner distal end is moving around in the fluid used for distention of the bladder. All these conditions may be present, although there is no concomitant inflammation to be found; therefore, all the symptoms apparent have to be ascribed to other existing changes; that is, atheromatosis of the arteries with its *sequelæ*.

This atheromatosis of the vesical arteries may exist, although no general degeneration of the arteries in the body is present. Such partial or localized atheromatosis is known to occur in other instances. Clinical observations and the pertinent post-mortems furnished the evidence that in some cases there exists calcification of deep-seated arteries—for instance, in the bowels—although the superficial arteries that are accessible to palpation are soft and straight, and *vice versa* we find in certain individuals who use certain groups of muscles to excess, such as mechanics, athletes, dancers and fencers, the respective superficial arteries hard and meandering, while the deep-seated arteries are soft and normal.

It is a fact well observed by and known to the gynecologic operators that not infrequently they find, even in young women, atheromatosis that is confined entirely to arteries of the uterus and its appendages. Similarly, we find sometimes vesical atheromatosis in young individuals who do not show any signs of degeneration of the arteries in other regions of the body. This is verified at post-mortems.

But, at least as far as our observations go, this vesical atheromatosis seems to be more frequent in individuals beyond the forties, and certainly more frequent in men than in women. We furthermore think that this local atheromatosis occurs mostly in individuals who are repeatedly or for some length of time continuously exposed to certain *noxæ*, such as excess in eating, excessive use of alcohol or tobacco, and, most important of all, to syphilitic infection.

It remains to explain how this localized atheromatosis could cause the above mentioned subjective and objective symptoms, as the transitory disturbances of the function of the bladder, the hemorrhages and the pains, and how the fact can be accounted for that for a long time no symptoms are to be observed, although the atheromatosis must have been developing for some time previous to the discovery of the annoying symptoms.

That means that we have to dwell a little on the facts that are known in a general way about atheromatosis of arteries.

Arteriosclerosis can exist for a long time without causing any distinct symptoms. When the period of distinct symptoms begins, then, as a rule, various sensory disturbances appear—crawling sensation, sensations of cold and heat in turn, and finally pain—that evidently must be brought in connection with the existing arteriosclerosis. It must be kept in mind, however, that arteriosclerotic pains may be brought to perception in various ways.

There are pains that are caused by pressure; a thickened, hardened blood vessel may excite pain by pressing on an adjacent nerve; this

pressure might be intensified by increased influx of blood, and again be attenuated by a reduction of the flow of blood, so that the intensity of the sensory perception is changed again. In most cases, however, we have to deal with pains, that Head calls referred pains. The sympathic fibers running in the adventitia of the artery are excited and transmit their irritation to the corresponding central points—that is, the spinal segments located at the same height as the respective sympathic plexus. It has to be admitted, though, that the stretching of the nerves in the adventitia may cause the perception of pain. Another cause of pain can be the misproportion between muscular effort and blood supply.

If, on account of arteriosclerosis, the blood supply of a muscle is impaired, and at the same time this muscle is exercised, it will tire abnormally quickly and its contractions will become decidedly painful. This explains a bladder phenomenon that at first glance would seem a paradox. If in a bladder with atheromatous arteries the contractions of the viscus are perceived as painful, the palpation of the bladder can be absolutely painless. This tallies with the experience in other muscles that are supplied by hardened arteries, namely, that the quality of the excitation of the pertinent nerves is a decisive factor in the production of pain.

If a muscle is overexercised it will certainly become sensitive to pressure, but the spontaneous pain perceived during active movements is far in excess of the pain caused by pressure from the outside. The explanation of this phenomenon is given by the theory that the products of muscle labor irritate in a chemical way the ends of the nerves, and this irritation is more keenly perceived than the irritation caused by outside pressure.

If the circulation be under par, on account of arteriosclerosis, the muscle will tire much quicker, and this precocious exhaustion will cause intense spontaneous pains on account of the faster accumulation of the products of muscle-labor. This relative anemia of a muscle will produce another phenomenon similar to one connected with exhaustion under normal conditions—that is, decrease of contractibility of the afflicted muscle. Contraction of arterial lumina in a muscle group that is supplied by sclerotic arteries will also cause muscular pain; this contraction of the arterial lumina is caused by vasomotoric influence, hence it becomes apparent that nervous or gouty people will be exposed to more frequent attacks.

It furthermore seems that true arteriospasms may be caused by the heightened excitability of the walls of the arteries. These arteriospasms are started by increase of the general blood pressure and vasomotoric excitations; the latter may also originate in psychic or mental disturbances. If these facts known about arteriosclerosis are applied to the special conditions of the urinary bladder, certain functional disturbances of the bladder and certain symptoms arising from it can be easily explained by the arteriosclerosis in the walls of this viscus. Spontaneous pains in the organ, painfulness of contractions, although no inflammation is present and although the viscus is not sensitive to palpation, find a ready explanation from this point of view.

In the same way it can easily be understood why and how the functions of a bladder with sclerotic arteries may be considerably disturbed. The impaired blood supply leads to reduced efficiency of the detrusor; occasional retention of urine may be found, although no mechanic obstacle to the urinary flow can be ascertained. If such a retention without obstruction is encountered, and if the absence of any spinal disease is established, the only explanation for this condition remains atheromatosis of the vesical arteries.

Occasional spontaneous bladder pains, painfulness of the vesical contractions by absence of inflammation, tumor, or stone, point directly to atheromatosis of the vesical arteries. If these spontaneous bladder pains, the painfulness of the contractions, if the insufficiency of the detrusor are increased under the influence of alcoholic or dietary or sexual excesses, or through the psychic or mental disturbances, the conclusions as to the diagnosis of atheromatous changes in the bladder are very plain. If the cystoscope employed after hemorrhages in the cavity of the bladder reveals the existence of sclerotic arteries in the mucosa, but excludes renal hemorrhage, tumor, stone, ulcer or varices, will lead conclusively to the diagnosis of arteriosclerosis prevailing in the bladder wall.

The oscillations in the intensity of the symptoms, the increase or decrease of it, according to the influence of certain *noxæ* or according to the exclusion of all damaging factors, speak for the vasomotoric origin of the subjective sensations and of the functional disturbances.

The diagnosis will be corroborated and finally established *exjuvantibus*. It is very striking what quick beneficiary action will be produced by administration of iodids in combination with bromids. This decided and rapid improvement under this medication is quite characteristic for conditions emanating from arteriosclerosis. That the improvement is not due to any specific influence of the iodids on a syphilitic foundation of the trouble becomes apparent if one considers that in the treatment of arteriosclerotic processes only very small doses of iodids are efficient, doses that are so small that they certainly would not alter any syphilitic proliferation, and that, furthermore, this treatment is efficacious in cases in which the Wassermann test gives a negative result. As a whole, the therapy of arteriosclerosis in the bladder wall will present itself as follows: First, all the factors have to be excluded that are apt to produce decided changes in the general blood pressure and in localized vasomotoric influences; therefore a bland diet, avoiding of strenuous exercise, of venereal excesses, exclusion or at least material reduction of the use of alcohol and tobacco. It should be mentioned that the liberal use of mineral water, so often employed in bladder troubles, is a medical impropriety; under this influence urine will be copiously produced and fill the bladder too often, so that the detrusor will be overworked. Daily prolonged baths have a very beneficiary influence, for two reasons: they produce relaxation of the blood vessels and stimulate the skin.

The administration of the iodids is best done in the form of alkaline watery solutions of sodium iodid and of sodium bromid in equal parts. Each dose contains about 5 centigrams of each drug, given three times

daily. In case the stomach of the patient should be intolerant, we have to resort to the daily intramuscular injections of iodipin, of which about 2 c.c. are given in each injection.

The beneficial influence of this medication becomes quickly apparent, and the administration of the drug is continued until all symptoms have disappeared. The symptoms usually recur after some time, which free interval will vary in length according to the individual conditions, and then the medication has to be repeated.

VESICO-VAGINAL FISTULA.*

CHARLES J. DRUECK, M.D.
CHICAGO.

Genital fistula—and by that is meant abnormal opening of the urinary system, either ureter, bladder or urethra, into the vagina—is perhaps one of the worst complications we are called upon to attend in pelvic troubles, because their effect upon the patient's nervous temperament and general health is far out of proportion to the pathologic lesion, and, no matter what the cause or origin may be, the sufferer ostracizes herself from even her friends.

Fistulæ in the upper part of the vagina result most frequently from malignant disease, either by sloughing of the cancerous tissue or by the surgeon cutting into the urinary passage while removing the diseased mass. This urinary wound is sometimes caused knowingly and sometimes accidentally by the surgeon. Fistulæ in the lower vagina result from: 1. Trauma, such as a protracted and difficult labor, when the bladder becomes filled and a fetal head pinches the bladder against the pelvic wall. 2. Imperfect union following operations. 3. Ulcerative processes of syphilis, tuberculosis or foreign bodies. 4. Anatomical malformations, although to a small degree. It may be well to remark here that great care must be used in catheterizing a woman in labor, because a catheter used too forcibly has caused a vesico-vaginal fistula.

Symptoms.—Where the lesion is the result of ulceration—that is, in post-parturient, syphilitic, tubercular cases—or where fistula is due to pressure of foreign bodies, the actual solution of the tissues that is to constitute the fistula is preceded by the development of bladder symptoms. In post-parturient patients these symptoms may occupy but a few days, but when due to other ulcerative processes the bladder symptoms may occupy weeks or months.

At first there is irritation and congestion of the bladder wall, as evidenced by the frequent micturition and dysuria. Then develops a cystitis, with high temperature. The epithelium of the bladder next breaks down and hematuria occurs. Then finally the bladder sloughs away and the urine gushes from the vagina. From this time on the incontinence of the urine is more or less complete. The degree of inconti-

* Read at meeting of the Chicago Medical Society, Dec. 29, 1909.

nence depends upon the location, size and shape of the fistula. If the opening is small or high in the vagina, the incontinence will occur only when the bladder is filled or when the patient is recumbent, and not so much when she is up and about. If the vaginal outlet is intact, urine will collect in the vagina while the patient is recumbent and then be expelled when she arises. This irregular incontinence sometimes causes the woman to believe that her trouble, instead of being an abnormal opening into the bladder, is rather lack of control of the sphincters of the bladder. This constant dribbling of the urine keeps the vagina and external genitals wet, thus causing chafing; and the urinous odor always about the woman is a great embarrassment.

The urinary salts are deposited about the fistulous opening and in the vagina, and when removed, either purposely or by the gradual breaking down of the crusts, the surfaces are found ulcerated and bleeding, and so excruciatingly tender in some cases that a thorough examination is impossible without a general anesthetic. Contraction goes on in one ulcer while crusts are forming on another place, and the opening into the bladder soon becomes circuitous.

For examination the patient should be placed in the lithotomy or in the Sims position, in a good light, either direct or reflected. The vaginal wall is now forcibly retracted opposite the expected site of the fistula, and the exposed mucous membrane is then carefully examined. If the opening is large, it may be detected by palpitation or with the sound. Simon determines the size of the fistula by dilating the urethra and palpating the bladder wall with the finger. If, however, the opening is small and cannot be found by palpation, it must be located by watching the urine seep through the mucous membrane. Even with careful work it may be necessary to distend the bladder with permanganate or some analine solution, and watch for its oozing through the wall into the vagina. Sometimes, instead of finding a definite opening from the bladder, the vesical mucosa will extrude into the vagina and the urine seep through this thin wall.

Prognosis.—Having found the cause of the fistula in the first place and its location, we are now ready to consider what the prospects are for its closure, and if it does not heal, why it does not. There is a vast difference in the history of fistulæ produced by incision or laceration and those resulting from sloughing, by bruising or ulceration. The former leaves a clean-cut, healthy edge, which tends to granulate and contract until the opening is closed. When the mucosa has broken down by necrosis and sloughed away, the history of the fistula is very different. The wound edges are poorly nourished and uneven. Granulation goes on at one place, while ulceration is still unfinished in another. About this sloughing mass is a region densely filled with leucocytes, which block the circulation. The lymphatics are also filled with débris, which they are trying to dispose of. It is little wonder with such pathology that regeneration does not progress or that urinary salts incrust the surfaces. These fistulæ never heal of their own accord. The condition of the surrounding vaginal walls is important. If it is fixed to the ischii by scar

tissue, there is little, if any, mobility. This, of course, prevents contraction of the wound edges. Then finally it must be remembered that there may be two or more fistulæ, which may open into the ureters, urethra or uterus.

Treatment.—Considering the variety of causes which operate singly or together to produce the fistula in the first place, and the added conditions which always complicate the course of every case, it is very evident that we have a number of divergent indications for treatment. Each patient presents symptoms and complications so peculiar to her case that all sorts of methods of treatment have been devised, and different operators have presented an array of different types of operations. This enormous list of different ideas, all bearing on one subject, shows in itself that we have a perplexing subject, and in many instances as unsatisfactory treatment.

All sufferers, regardless of the cause of the fistula, should first be given a course of palliative or preparatory treatment, which in some cases will effect a cure, and in all instances, even in patients who must later submit to surgical treatment, it will greatly enhance the chances of cure by cleansing the wound area, reducing infection and unloading the lymphatics. In patients presenting recent lesions, cleanliness and keeping down fatty granulations will assist Nature to close the opening. Boric acid or saline solution vaginal douches should be given several times daily to remove septic or necrotic masses. If a sloughing mass can be seen, it should be cut away. Fistulæ of one or two centimeters diameter will frequently heal under this care, but it usually requires three to six months. If the granulations seem sluggish and the fistula is very small, the edges may be freshened and the bladder drained with a retained catheter through the natural passages for a week or ten days. Due care must be given to see that the urine is kept acid during this time, and the frequent vaginal douches prevent infection of the bladder from the vagina.

Traumatic fistula should not be treated surgically for at least two months, because under this palliative treatment many of them close spontaneously. Lime salt deposits and crusts should be removed, and the frequently repeated douches of boric acid are usually effective, or nitric acid, 1 to 4,000, may be used. Frequently ulcerations will be found under the crusts, and these must be cured before attempting any operation. If the douching is not sufficient, the ulcers should be brushed every few days with nitrate of silver solution, 5 grains to the ounce. At each vaginal douching the parts should be inspected, and if any sloughs or masses of mucus are found they should be carefully wiped out with cotton pledgets. If any scars or bands distort or stretch the vagina they must be divided and allowed to heal on the stretch. Sometimes these scars constrict the urethra and will call for thorough dilatation of this passage before repairing the fistula. Where the fistula is dependent upon some other diseased condition, such as cystitis or tubercular ulceration of the bladder, the underlying cause must be corrected before anything

more than palliative treatment is attempted, because no plastic operation can cure without it.

If a fistula into the rectum and another into the bladder co-exist, the recto-vaginal opening must be repaired first and allowed to heal before attempting to close the vesical sinus, as otherwise the bladder stitches would surely be infected.

There are, however, cases where treatment as outlined above will not effect a cure. When the fistula has existed for a long time, and is surrounded by dense cicatricial tissue, nothing but operative procedure can hope for a cure, or when the opening is large and high up in the vagina some very ingenious surgery is needed, and in each case the style of operation depends upon the conditions peculiar to that case. The greatest handicaps to plastic work are tension of the sutures and wound infection, and the only way to lessen the dangers of the complications is to prepare the patient by some course of preparatory treatment along the lines suggested.

438 East Forty-sixth Street.

NERVOUS SYMPTOMS IN DIABETES.*

L. Harrison Mettler, A.M., M.D.
CHICAGO.

A close relationship between diabetes and disturbance of the nervous system has been recognized from time immemorial. Since Bernard's famous discovery this relationship has been definitely acknowledged. And now many go so far as to affirm that whatever may be the immediate cause of the glycosuria, alimentary, pancreatic or medullary disease, diabetes mellitus is essentially a nervous affection. Seegen has said that 90 per cent. of the cases of diabetes are the result of some disturbance in the nervous system. And it is believed by many that not only these so-called neurogenous forms, but all forms of the disease exhibit their deleterious influence chiefly through and in the great regulating function of the central nervous system, especially the vasomotor and abdominal sympathetic centers. When we allow ourselves to think of the intimate relationship of the nervous apparatus to all of the processes of nutrition, and at the same time make a mental note of the delicacy of organization and high vulnerability of the nervous tissues, we will not be surprised at the dual rôle of culprit and victim so confusedly played at times by the nervous system in this great constitutional metabolic disorder. This alone offers a sufficient explanation of the prominence of the nervous manifestations among its innumerable symptoms.

In approaching a discussion of these manifestations, one is always confronted with the question as to whether they are representative of cause, mere association or resultant products of the disease. At one time

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* Abstract of remarks made in a symposium on Diabetes before the Chicago Medical Society, Jan. 19, 1910.

there was endless confusion in this regard, but lately observation and experimentation have clarified our knowledge considerably.

The etiologic incidents of diabetes, upon which much stress has been laid, strongly indicate an underlying neuropathy, and this must be remembered always when attempting to make a diabetic valuation of this or that neurologic manifestation. For example, heredity, race, sex, physical and functional nervous traumata, and certain infectious and diathetic states operate prominently behind diabetes, as well as many forms of nervous disease. It is always a question as to which of the two the nervous symptoms associated with the glycosuria are to be attributed. Is the patient a neurotic with diabetic glycosuria, or is the condition which we commonly understand as the disease diabetes mellitus to be charged with all the patient's psychoneurotic manifestations? The distinction is an important one and sometimes a most difficult one to make. It has a bearing, however, on the prognosis and the treatment of the disease.

Again, there is a definite enough association between diabetes and diseases of the nervous system provoking marked nervous phenomena to induce one to suspect at times a direct causative influence of the latter upon the former. Multiple sclerosis and tabes dorsalis may not only give rise to diabetes by direct implication of the vasomotor centers of the medulla oblongata, but they add materially to the gravity of the prognosis of the latter affection, however it may be related to them. Primary insanity may not be in any way an immediate cause of diabetes, but it is found so often, in a suggestive way, in families wherein diabetes is met with, that some sort of a connection between the two classes of troubles may legitimately be imagined. The same is to be said of hysteria, epilepsy and inherited syphilis. As to the not infrequent clinical appearance of glycosuria in the course of Addison's disease, Basedow's disease, Friedreich's disease, one is impelled occasionally to ask if there is not something more than mere parallelism between the two sets of phenomena. And, finally, when we recall how usual are nervous manifestations during or after such general infections as syphilis, influenza, typhoid, diphtheria, rheumatism and even malaria, we are not surprised to find the diabetic manifestations occasionally present also. Now, it may well be that the glycosuria is but another, though occasional, symptom of all these maladies, and in such a case the nervous symptoms may belong to the primary disease, though enhanced by the accompanying disturbed metabolism and consequent toxemia.

The point which I am endeavoring to emphasize is that in the presence of these other troubles and in the absence of more accurate knowledge as to their exact relationship to the clinical entity which we recognize under the generic term diabetes, a mere glycosuria, even when continously commensurate with the associated disease, should not be made the diagnosis of diabetes mellitus; much less should the nervous manifestations be dogmatically attributed to the diabetes supposed to be indicated by sugar in the urine. Only when the glycosuria has become permanent and accompanied by symptoms outside of the nervous system, as, for instance, in the skin, and known to be characteristic of diabetes,

should all hope be given up of overcoming the latter by treating the former.

Remembering Seegen's assertion that 90 per cent. of the cases of diabetes are initiated by some disturbance in the nervous system, we may readily allow that the disease has been often directly caused by mental shock, cerebrospinal traumata, intracranial neoplasm and other lesions involving primarily or secondarily the vasomotor apparatus, its chief center in the medulla and connections with the abdominal sympathetic ganglia. And thus it must be obvious to everyone that at the very beginning of a discussion of the nervous symptoms, as well as in the examination of every case of suspected diabetes, we must stop and consider the relative importance of these manifestations as etiologic, associated or resultant factors.

One way of presenting the neurologic picture of diabetes would be to report a few illustrative cases. This, however, would portray but limited phases of the subject, as no two cases are ever exactly alike, and it would interfere with the discussion of some of the later scientific generalizations in the way that they ought to be discussed. And so it has seemed to me that it might be more profitable, where there is so much to consider, to indicate a few general principles underlying the neurologic phenomena and their appearance in the general clinical picture of diabetes mellitus.

The first thing to be noted is that the nervous manifestations, widely distributed as they are, involving apparently any or all of the functions of the nervous apparatus, represent a state of depression, psychic and mental deficiency, physiologic inadequacy. The psychoses, the reflexes, the trophic exhibitions, are all on the minus rather than the plus side of the equation. Melancholia instead of mania, diminution instead of exaggeration of reflexes, atrophies instead of hypertrophies, are the dominant types of symptoms. This of course suggests a more or less destructive katabolism from a high degree of malnutrition, or what is more probable, a profound condition of toxemia. In some instances even the physical effect of the sugar in the blood in withdrawing water from the tissues and in affording a favorable saccharine nidus for the development of germs, as, for example, the tubercle bacillus, must be added to the deleterious results of the malnutrition and toxemia. It is to the poisons in the blood, however, that we allow the greatest credit for the production of the nervous phenomena of diabetes. Unless there is a variation in the nervous manifestations bearing some degree of parallelism with variations in the toxic findings in the blood and urine, we must be very guarded in attributing all these depressed nervous phenomena to the diabetic trouble. The patient's previous mental and nervous health must be closely inquired into, and in a certain proportion of cases it will be found that the same symptoms were more or less in existence long before any signs of diabetes had shown themselves. A melancholia may well be a congenital or hereditary psychasthenic revelation rather than a diabetic one, in spite of the fact that there is present a more or less permanent glycosuria. A diabetic may suffer an apoplectic stroke just as well as anybody else, and the attendant coma in such a case may have no connection, misleading as it may be, with a diabetic coma. A multiple

neuritis need not necessarily be attributed to diabetes, because, forsooth, a more or less persistent glycosuria has been recently detected. The patient may have been using alcohol. The practical point here urged is that the diagnosis of these neurologic manifestations as being due to diabetes, rests not so much upon the manifestations themselves as upon the other evidences of the presence of profound toxemia, as, for instance, the acetonuria.

A second general observation in regard to the nervous manifestations of diabetes is that they involve mostly the psychic and neuritic spheres. In other words, the symptoms indicate usually a disturbed mentalization, from a mere psychasthenic state all the way up to a profound coma; and a peripheral neural pathology, from a mere functional neuralgic irritability to a high degree of neuritis, with all the serious sensory, motor and trophic consequences. This is analogous to the same general symptomatology observed in other forms of intoxication, as, for example, plumbism and alcoholism; it also helps to confirm the view that the nervous incidents of diabetes are due to a definite toxemia of some sort. On the negative side it is to be noted that central inflammations, marked vascular lesions in the brain and cord, new growths, sclerotic processes and abscesses are practically never found as a part of the immediate pathology of diabetes. Toxic psychoses and toxic neurites cover almost entirely the neurologic symptomatology, with few exceptions, of diabetes.

Psychasthenic states and coma and intermediate degrees of disturbance represent the mental manifestations of diabetes. The diabetic is noted for his irritability, quickness of temper, petulance and constant complaining of mental fatigue. There is nothing hysterical about all this; it is purely mental depression, cerebral inadequacy, a true toxic psychasthenia. These patients are wofully introspective, analyzing themselves and their own feelings monotonously. They are oversensitive. This gives undue prominence to their own ego, and they therefore appear offensively egotistical. Naturally, they do not like to be crossed; and being imbued with the idea of their own relative importance, they interpret much that is said and done around them as criticism of themselves. On account of this they become full of vague suspicions. This exalted degree of sensitiveness, coupled with the egotistical self-analysis, eventuates in a distressing lack of self-confidence. This constant abstraction and concentration of attention upon themselves diminishes the power of attention for outward things, and gives them the appearance of being mentally somewhat dull. Indeed, it even goes so far as to make the patient appear dull to himself. He complains mildly of not understanding what is said to him, especially if the conversation assumes the character of a continuous, complicated argument. The patient's intellectual processes are slightly blunted; and at times this amounts to a distinct condition of stupor, with or without somnolency. The mental dulness invades the moral sphere, so that these diabetics are sometimes annoyingly indifferent to their obligations, their promises, their behavior and their speech. Subjectively, they dread prolonged mental effort, and hence, both to themselves as well as to their friends, they seem to have lost the power of initiative. This amounts at times to quite a consider-

able degree of aboulia. Subjectively, they are harassed by the feeling that they have lost the power of memory. While this is always an exaggerated notion on the part of the patient, often there is a distinct amnesia, especially for proper names and figures. This mild amnesia invades the speech function so that there is an apparent amnesic aphasia. Occasionally, a motor aphasia of mild degree is observed. The clinical picture often assumes more of a neurasthenic complexion than the one just outlined. Then there are present the characteristic paresthetic "cap-like" headache, vertigo upon sudden movement, nocturnal insomnia, or rather broken sleep, cardiac palpitation, coldness of the extremities, coated tongue, anorexia, constipation, general sense of fatigue out of all proportion to the exercise just undergone, objective motor and sensory deficiency, and an easily recognized irritable weakness in all the reflexes.

Legrand du Saulle's *delire de ruine* and Freud's "anxiety neurosis" are but similitudes of the melancholy so noticeable among diabetics. Psychalgia or melancholia represents always a depressed or subnormal mentalization. It is the expression of mental irritable weakness. In diabetes it is toxic in origin, and is therefore not to be confounded with the melancholia of the primary psychoses. Sometimes this mental depression assumes the character of a typical hypochondriasis. In rare cases these depressed melancholic states alternate with motor restlessness, mental exhilaration and mild delirium. The manic-depressive type of insanity is thus remotely imitated. Mania is exceedingly rare; and though the mental aberration that occurs is allied to melancholia, even the latter as a distinct psychosis is rare. A circular form of insanity is more often found associated with continuous glycosuria than is mania. Curiously, the insanity and the glycosuria often alternate.

Remembering the toxic origin of general paresis and the common blunder, almost inevitable, of diagnosing very early dementia paralytica as psychoneurasthenia, it is not to be wondered at that Laudenheimer has described a pseudoparesis not infrequently seen among diabetics. There are the same disturbances of attention, defects in the associative memory, interferences with the functions of speech and locomotion, peripheral palsies and impairment of the light reflexes. In these cases improvement usually occurs when the sugar vanishes from the urine.

The supreme mental disturbance in diabetes is of course the well-known and the much-dreaded coma. This was first accurately described by Kussmaul in 1874, and is therefore sometimes named Kussmaul's coma to distinguish it from the same phenomenon as it is observed in many other pathological states. It occurs in about 50 per cent. of all cases of diabetes, and is always a possibility, whatever the age of the patient may be. It is somewhat more frequent, however, in the young than in the old, and in the acute than in the long-standing cases. In regard to the pathogenesis of the coma, we are still totally in the dark. That it is toxic in origin there can scarcely be any doubt. It is probably due to a condition of acidosis. Some think the offending substance in the blood is acetone or aceto-acetic acid; others the B-oxybutyric acid. It has even been suggested that it is due to the presence of paraldehyd or to trimethylamin or to the deprivation of the blood of certain salts,

especially soda. The two substances first named receive the strongest recognition, however. Practically the presence of acetonuria should put one particularly on his guard.

Among the exciting causes of coma in the course of the disease we note unusual nervous excitement and fatigue, marked depression of spirits, sudden changes of diet or of medication, shock from cold and acute intercurrent disease. Though von Noorden believes that the B-oxybutyric acid has something to do with the production of the coma, he does not believe that the latter is in any way specific, but is the result generally of the extreme exhaustion of the patient.

The symptom is so well known that scarcely more than a word in regard to its general clinical manifestations need be said here. The earliest period at which it has been observed, to my knowledge, is three weeks after birth. The child was born diabetic according to the report. When it is possible to note its onset, there will always be observed for twenty-four or forty-eight hours a certain number of characteristic prodromata. In conjunction with the gradual malaise, languor and growing weakness there will be noted a progressive quiet stupor. The breathing becomes slightly disturbed and soon grows accelerated. Only occasionally the attack bursts out with great restlessness, delirium and a high degree of maniacal excitement. Sooner or later intense drowsiness supervenes and this gradually lapses into profound stupor. Then the respirations rise to thirty or forty to the minute, and become hurried and deep. The breath exhales the odor of acetone. The pulse becomes rapid and feeble, numbering 130 to 150 beats to the minute. The temperature falls to a subnormal point and the body and limbs feel cold. The pupils dilate and the face appears cyanotic. If the patient can indicate distress at all he complains of pain in the epigastrium. The urine is diminished or entirely suppressed and gives reaction for acetone and ferric chlorid. Generally at this time there is some albuminuria present. The bowels are most sluggish. As the case moves on toward death, the temperature rises to 103 or 104 F., the cyanosis deepens and general convulsions close the scene. Frerichs has attempted to establish three types of coma, but such a refinement is more academic than practical and is quite unnecessary. The whole picture from start to finish bears a certain resemblance to the encephalopathy of lead intoxication, the uremic condition and pellagra. The same sort of coma and comatose state has been observed in pyonephrosis, chronic cystitis, gastric and hepatic cancer, profound anemia and related conditions. It is to be excluded, by obvious characteristic symptoms, of course, from intracranial apoplexy, epilepsy, hysteria, alcoholism and tubercular meningitis.

As everybody knows, the outlook in diabetic coma is decidedly bad; and yet one must bear in mind that recovery has occurred, though rarely (Reynolds, Quincke, Gambee, Mettler).

As to any involvement of the spinal cord and its functions in diabetes, neither the clinic nor the autopsy afford any evidence. At one time much was said about a diabetic tabes and certain secondary changes were described in the posterior columns. Now these cases are recognized as being neuritic and are referred to as diabetic pseudotabes.

Next to the mental disturbances the peripheral neuritic manifestations are the most important in the neurologic symptomatology of diabetes. The clinical manifestations of this condition may range all the way from paresthetic and neuralgic functional disturbances in one or more nerves to the severest signs of a profound neuritis involving motility, sensation and local nutrition. Many of the symptoms observed in the organs of special sense, the visceral organs and the skin, are but the secondary results of a severe underlying toxic neuritis.

Among the special nerves involved we note that the sciatic is a frequent sufferer. Bilateral sciatica is particularly common among diabetics. The crural nerve is also not infrequently implicated. The same may be said of the circumflex and other branches of the brachial plexus. Among the cranial nerves special mention must be made of the optic, oculomotor and trigeminal. Intercostal neuralgia is not uncommon. Indeed, any neuralgia should call for a careful examination of the urine, and if the slightest degree of glycosuria be found, suspicions of diabetic neuritis should at once be awakened.

Instead of localized, scattered neuritis there may be present a generalized polyneuritis, especially of the lower extremities. This may be of a progressive degenerative character or of a frank inflammatory interstitial origin. The symptoms will be much alike in both types, and in a way will closely simulate the symptoms of tabes dorsalis. There will be lightning pains, formications, sensations of heat and cold in the hands and feet. The touch and pain senses will remain normal. The gait will be hesitating and uncertain without ataxia, the *steppage* gait. The Romberg sign, with eyes closed, will be present. Control of the sphincter ani will be more or less lost; and there will be some incontinence of urine. The knee-jerks will, of course, be lost; and though there will be but slight atrophic wasting of the muscles, the electrical reaction of degeneration will be easily elicited. Cerebral symptoms, apart from those already described, will be noticeable for their absence. How nearly all this resembles the picture of locomotor ataxia! The differentiation between the two diseases is at times almost impossible. It is to be remembered, however, that true tabes usually gives a history of syphilitic infection. Its gait is distinctly ataxic. There are present girdle pains, anesthesia, crises, vesical troubles. Bilateral myosis and typical Argyll-Robertson pupil will clinch the diagnosis for locomotor ataxia, though it is to be remembered that the light reflex, as Grube has shown, is often disturbed in diabetes. It seems to me that much unnecessary study has been devoted hitherto to such special manifestations as the loss of the knee-jerks, dyspnea, pruritus, perforating ulcers, facial necrosis, atrophies, edemas, shedding of the nails, erythema, hyperidrosis, Raynaud's symptomatology, etc., as diabetic complications. These are all readily explained to-day as the results of the widespread neuritic condition, and therefore when it is recognized that neuritis is almost a constant accompaniment of the diabetic syndrome, these secondary manifestations must be expected more or less and be readily accounted for upon the neuritic basis. For instance, Bouchard and others have given special attention to the knee-jerk and find that it is lost or diminished frequently in diabetes without

other signs of a tabetic character. It is noted in about 43 per cent. of all cases and at all periods in the course of the disease. For obvious reasons it suggests a grave prognosis. Dreyfus goes so far as to say that if the knee-jerks are at all exaggerated he would exclude true diabetes though glycosuria were present. Such is the importance of the neuritic manifestations in diabetes.

In this brief way have I endeavored to point out the cardinal neurologic symptoms of this profound malady which in itself is so largely a nervous trouble, and in all of its forms complicates more or less all of the nervous functions always. Time has been too limited to do full justice to so large and interesting a subject.

THE TEN-HOUR LAW.*

PROF. ERNST FREUND.
CHICAGO.

There appears to be some sentiment among the members of the legal profession that it is not quite in accordance with the canons of professional etiquette to make a question, which is pending before the courts, a matter of public discussion. As a member of the bar of this state, I should feel bound to obey any unwritten law which I thought was clearly acknowledged, but I do not believe that there exists any such broad injunction against comment upon pending questions and that, carried beyond proper bounds, such an injunction would be unfortunate.

I believe that the courts should be exempt even from the appearance of pressure and undue influence. I believe that every presumption should be indulged in favor of their single-minded desire to determine cases according to the law as they understand it, simply because such a presumption, I am firmly convinced, is in entire accordance with the facts. Therefore, I should consider as unfortunate and ill-advised any attempt on the part of a public body to pass resolutions either of a denunciatory or of a hortatory character, implying that questions should be determined in one particular way. And I should also deprecate any questioning of motives or any personal criticism of any kind. To that extent I believe the rule I have alluded to to be sound and necessary. On the other hand, I believe that great public issues are at all times proper subjects of study and debate. The process of information and enlightenment cannot stop while justice is engaged in its slow and deliberate work. And the moment for the most fruitful discussion of a scientific problem is precisely when that problem happens to be of the greatest actual interest. While, therefore, I have no intention of commenting particularly upon the pending ten-hour case or express an opinion regarding the merits of the controversy, I have no hesitation in trying to explain in a few words the principles that are involved in that phase of our industrial legislation which must be of particular interest to the medical profession.

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I may be permitted to begin with a few very general remarks. Until the last third of the nineteenth century public regulation in this country sat very lightly upon business interests. Several circumstances combined to produce this negative result; the need which an undeveloped country had of the utmost exertion of all its energies; the relatively favorable conditions under which work was carried on; and a strong democratic sentiment against state interference, based upon these conditions. Nor should we ignore the predominance of the school of economic thought prevailing at that time which, even in Europe, kept down state control to the minimum of interference with industrial conditions.

In course of time, however, conditions were bound to change. Our conditions became more Europeanized, and with the more strongly marked differentiation of the working classes there came the demand for a stronger public control, partly in the interest of the public at large—with this we are not now concerned—partly in the interest of those employed in industrial work. It is the latter which has resulted in that movement which we designate by the term "labor legislation," and which has advanced so much faster in Europe than in this country. This movement represented in part the growing power and ambition of the working classes, the struggle for economic rights and betterment; in part, however, also the growth of the social conscience as to what classes owe to each other. This dualism of economic interest and social duty runs through the whole of our labor legislation.

It was naturally the economic struggle which at first impressed itself most forcibly upon those upon whom the burden of the new legislation bore directly, namely, the employing classes. The initial attempts at public regulation were frequently immature and crude and sometimes unjust, and the aid of the courts was sought against them. Courts are apt to be conservative and to stand for the old order of things. They are also inclined to lean toward the individualistic conception of the state and toward the protection of rights of property. It is not easy to formulate with precision the principles which the courts adopted with reference to the economic aspect of this legislation, for there is considerable conflict in the decisions between the different states, and even within the same state a large amount of fluctuation and inconsistency. But I think it may be said on the whole there was a strong feeling that it was contrary to American institutions to interfere in economic controversies for the advantage of one side or the other. And to this feeling our courts have given expression by reading into American constitutions the doctrine of freedom of contract.

Against this constitutional liberty of private action there has always been set what is called the police power. The imperative demands of the public welfare are even in this country held to override the claims of individual liberty and of private property. Foremost among these demands is the public health. So far as the health of the public at large is concerned, conditions which affect the entire community, we have a perfectly undisputed title of legislative power, as many experiences in times of epidemic disease have demonstrated. The title should be no less disputed where, in the case of industrial regulation, it is merely a

question of protecting the health of the workers themselves who may be said to assume the risk voluntarily. There was an English statesman who said that he preferred England drunk and free to England sober by act of Parliament. And there was and is perhaps a school of statesmen that would be willing to apply this phrase to health and sickness. But, if so, it cannot be said to have the support of either the prevailing political thought or the prevailing constitutional law. We all believe that liberty, in order to be worth while, must operate under conditions that make its efficient use possible, and that it is the business of the state, if necessary, to force these conditions upon unenlightened elements of the community or upon selfish interests.

The principle which results from these considerations sounds simple enough; there is a constitutional right to freedom from legislative interference where merely the economic aspects of the relation between employer and employee are involved, subject, of course, to many modifications in detail into which it is impossible and unnecessary to enter at this time. But, on the other hand, industrial liberty, freedom of contract, the owner's right to manage his own business, all these must yield to the preservation of the health of large sections of the population, engaged in industrial employment. The practical difficulty in applying this principle lies partly in our inadequate knowledge of dangers and remedial agencies, and partly in the economic impossibility of making the highest standard the normal requirement. A radical measure of restraint to meet a remote sanitary risk is open to the suspicion that it serves, under the plea of the public health, other unavowed ends which would not justify state interference. If constitutional rights are to be judicially protected, the courts cannot be expected to accept in every case without questioning a statute merely because it claims to aim at some sanitary danger.

Occupational disease probably demands more victims and causes greater loss and suffering year by year than industrial accident, yet it is on the whole less effectually dealt with by the law. The employers' common law liability has always been a negligible factor in the relief of the workman from the consequences of disease contracted in the course of employment. Not until 1906 did England undertake to introduce by statute such relief to a very limited extent, while in Germany there has been for over 20 years a compulsory sickness and invalidity insurance of workmen, to the cost of which employers are required to contribute. This kind of employer's liability is not yet even agitated in this country.

We deal with the risk of disease exclusively through the power of preventive regulation. So far as these regulations relate to the physical or material conditions of the workshop they have passed unchallenged. There are, however, risks which cannot be reached in this way, and to which the worker remains necessarily exposed. A limitation of the time of exposure would, then, seem to be the obvious remedy. A demand which has generally been understood to serve economic or social purposes may thus assume the form of a sanitary requirement, and this confusion of purposes becomes still more marked where there are no specific risks of disease, but merely the general danger of debilitation, through

overfatigue and nervous strain consequent upon excessively prolonged hours of labor. If there is a danger line, the point at which it is reached and passed must vary with individual constitutions and under different conditions of work, and any uniform limitation of work time must to a certain extent be speculative and arbitrary.

It is, therefore, not surprising that when it is attempted to regulate hours of labor under the plea of public health there should be a considerable amount of controversy and difficulty as to the legitimacy of this kind of legislation, and that there should be conflict and obscurity in the adjudicated cases. Let us distinguish between children and young persons, adult men and adult women.

Children and young persons are under legislative tutelage and they do not enjoy the fulness of constitutional rights. It is within the power of the legislature to determine whether they shall be permitted to engage in industrial work and, therefore, of course, still more, how many hours and at what times of the day they shall be permitted to be employed. Their case, then, presents no constitutional problem. The movement for a shorter work day for men has, on the whole, always been frankly an economic movement; an endeavor to raise the general standard of life, to lighten the burden of toil, to give opportunity for recreation, culture, the enjoyment of the home and all that is supposed to go with rational leisure. I am not aware that, generally speaking, the eight-hour day, the goal of the movement, has ever been demanded as a sanitary measure. We may be in entire harmony with the aspirations that are embodied in this movement and yet be unwilling, at least at this time, to translate these aspirations into statutes. This, I think, is at present the dominant feeling in Europe. And the same feeling in this country assumes the form of the constitutional principle that, in the absence of a compelling interest of health or safety, the right to determine the number of hours of work is one of those constitutional rights which the legislature must respect. Our courts are substantially agreed as to this, and, while the eight-hour day has been largely introduced for state and public works, no attempt has been made to force either an eight- or a ten-hour day upon private industries except where it was contended that such a measure was required by public health or safety; and the doubts that have arisen as to the validity of such measures have been entirely due to the uncertainty as to whether that plea is well justified. The Supreme Court of the United States has held a ten-hour law for bakers to be unconstitutional. On the other hand, it has sustained an eight-hour law for smelters and miners, while the State of Colorado has declared the same law to be invalid. It is quite obvious that there must be room for a great deal of difference of opinion as to the conclusions which have thus been reached.

Now let us consider the case of the adult woman. In contrast to the legislation for men, the agitation for a reduction of hours of labor has always leaned strongly upon the plea of health. If this plea was well founded, it does not take from its force that collateral considerations may have moved those who advocated the legislation. There is much reason to suppose that in England the shorter day for women was urged

very largely because the men knew that the reduction in their case would operate also in favor of the men. In fact, the public discussion was carried on upon that basis while the bills proposed were confined to women and children. There is also a certain feeling that, apart from questions of public health, the power of the legislature over women should be greater than over men. This might be placed upon the ground that women have not the same facilities for organization and consequently for self-help that men have, and that, therefore, their economic inferiority in the industrial struggle calls for equalization by the power of the state. As this ground has not been strongly urged, I shall dismiss it from consideration. It is, however, necessary to notice another argument which has been put forward by the Supreme Court of the United States in sustaining the ten-hour law for women of the State of Oregon, which has been the model upon which our recent law in this state has been based. Mr. Justice Brewer, who wrote the opinion in the case, threw out some suggestions that woman was so constituted that she would always have to rest upon and look to man for her protection. This seems to amount to a proclamation of dependence and inferiority of constitutional right, and it is doubtful whether women will be satisfied to have such a position assigned to them. Be that as it may, our own supreme court seems to stand for the doctrine of freedom of contract as applied to women as well as to men. This, at least, is the theory upon which fifteen years ago an eight-hour day for women is supposed to have been declared unconstitutional in this state. In this state, therefore, legislation for the reduction of hours of labor for women should rest, like that for men, for its justification either upon hygienic and sanitary considerations or upon other equally forcible requirements of the public welfare. And it is for this reason that our recent ten-hour law, which is now before the courts, presents a problem of particular interest to the medical profession.

The decision of the supreme court of the United States sustaining the Oregon law is not absolutely binding upon our supreme court, which may regard our state constitution more liberal to individual right than the federal constitution, but the views of the highest tribunal may be expected to carry great weight.

If the present law were another eight-hour law, it would be necessary to convince the supreme court that it made a mistake fifteen years ago, and, in view of the fact that no other great industrial commonwealth has as yet established an eight-hour day for women, this might prove to be a difficult task. But the present law has fixed upon ten hours, the limit adopted by Massachusetts a generation ago, by a steadily increasing number of our states since that time, and by Germany just about a year ago. It will, therefore, be only necessary to convince the court that the excess over ten hours of daily work under modern factory conditions is detrimental to the health of women workers and to the unborn generations whose mothers they will be.

It is in this respect that the notable briefs which have been prepared by Mr. Brandeis, the counsel for the people in the Oregon case before the United States Supreme Court and again one of the counsel for the people

in the present case before the Illinois Supreme Court, are so significant. Mr. Brandeis undertakes to prove the danger of excessive hours of labor of women by bringing together an enormous mass of official and scientific material gathered from blue books and other legislative documents, from factory inspectors' reports, administrative inquiries, scientific treatises, from America, Germany, France, and Great Britain. Thus the issue of fact is met squarely and it will be the duty of the court to pass upon it. Every one expects that this mass of material will receive due consideration at the hands of the court and will be carefully weighed. Can as much be said for the formation of the legislative judgment? Why is it that the careful array and marshaling of evidence is reserved for the judicial contest? Why was not the same pains taken to convince the legislature that is now taken to convince the courts? If you ponder over that question you will realize why it is that we need constitutional principles enforced by the courts. But the important thing is that at some stage or other the proof may be called for, that an actual and appreciable danger to public health or to the health of large classes of the community must be made out.

In other words, under the operation of our constitutional principles, it is not safe to legislate blindly. When that fact shall be fully appreciated, the obligation on the part of those who ask for legislation will be better realized. It will not be sufficient that legislation rests upon a vague and uninformed public opinion, but public opinion itself must rest upon a solid basis of fact and information in order to transform itself effectually into legislation. Public opinion, in other words, in order to be effective, must be enlightened. When President Roosevelt called his first conference upon the conservation of natural resources, he had the scientific facts bearing upon soil denudation, erosion, deforestation, etc., presented by the foremost scientific authorities of the country. The problem of woman's hours of labor touches the very fountain head of the conservation of the human resources of this country, surely an object not less important than that of the conservation of natural resources. And we want, first of all, to be placed in the possession of the facts. What we need to convince our courts of is to what extent the physical effect of industrial work differs from that of other work. They need to be informed with regard to the effects of the monotonous routine of machine work upon the nervous system; of the speeding of machinery upon powers of endurance; of the danger of overfatigue and the effect of long hours of standing upon the female organism and particularly upon the function of maternity. All these are matters which bear upon the validity of legislation and for enlightenment upon which we have to look to the medical profession. And not only should these facts be ascertained, but they should be made the common possession of the community; they should so enter into the public mind and public conscience as to become matter of judicial notice.

We all realize that we are dealing here with facts which are not capable of precise measurement. For that very reason, however, it is of the utmost importance that as far as possible the effects and dangers inherent in different forms and kinds of work should be differentiated and that, if the term may be used, the risks of health as well as the risks of accident should be standardized. Not until this is done will our legislation be placed upon an impregnable basis. And such a foundation can be laid only if medical science will furnish the necessary data.

Those data may convince us of the need of further extension of the ten-hour law. It will not need much argument to persuade us that there should be a period of compulsory cessation from work for women before and after childbirth. The new German law which has just gone into effect fixes this at eight weeks. That same law prohibits night work for women, and provides, as many of our state laws do in effect, for a shorter workday on Saturdays and on the eve of holidays.

Restrictions of the latter character should be characterized as social rather than hygienic, and it is hardly necessary to point to the importance of this other class of considerations. When our courts speak of the public welfare as an object of the police power, their vision evidently extends beyond the public health into a province the boundaries of which are not yet marked off.

I wish to guard, finally, against a misapprehension of the limitations upon the legislative power which I have discussed. Let us understand clearly the nature of our constitutional principles. The doctrine of the freedom of contract is, I believe, part of the present constitution of Illinois. What makes it so? There is nothing in the letter of our written constitution that compels the acceptance of such a doctrine. It has been read into our constitution by our Supreme Court, which we have made the interpreter of our law. The fact that other courts have proclaimed the same doctrine shows that there may be presumed to be some foundation for it in the spirit of our institutions. But the judicial decisions that stand for the doctrine have not the ring of unquestioning assurance; there is so much vagueness and vacillation that it is easy to see that we are passing through a period of doubt and transition. Unless we are exempt from world-wide tendencies, we shall inevitably extend the field of public control. When public opinion will become convinced of its necessity, our courts, elected by the people, will yield.

Our system of constitutional limitations means that no radical change of fundamental policy can become established without gaining the approval of the judiciary as well as of the legislature, and we cannot be sure of that approval unless legislation represents the best informed and most enlightened public opinion. In the particular phase of industrial legislation which I have been discussing, this enlightenment can only come through the members of the medical profession.

COMPRESSED AIR ILLNESS ("CAISSON DISEASE").*

PETER BASSOE, M.D.

Assistant Professor of Nervous and Mental Diseases, Rush Medical College; Attending Neurologist to Cook County, St. Elizabeth's and Swedish Covenant Hospitals.

CHICAGO.

The modern caisson was invented by the French engineer, Trieger, in 1839, but primitive diving bells have been in use for centuries, and the effects of variation in atmospheric pressure were known many hundred years ago. Indeed, a surprisingly complete series of animal experiments was reported by Robert Boyle[1] in 1670. He placed all kinds of animals in air-tight chambers, caused the air to be rarefied, observed the liberation of air bubbles in blood vessels, and even mentions having seen them in the aqueous humor of the eye of a snake. The Leyden professor, Van Musschenbroeck, in 1755, confirmed and further elaborated Boyle's experiments. The astronomer, Halley, whose comet now is attracting much attention, in 1716 wrote an article entitled "The Art of Living Under Water," in which he describes a descent to a depth of ten fathoms by means of a diving bell constructed by himself, and mentions that some of the men had pain in the ears and nose-bleed on reaching the surface.

The mechanical and physiologic principles involved are the same in the case of divers and caisson workers, and, as the latter class plays a more important rôle in our community, we will confine our attention to it.

The simplest form of caisson is nothing but an iron cylinder, open at the lower end, where it has a sharp edge and often is made wider and somewhat bell-shaped. It is mainly used in making foundations for bridges and heavy buildings and in tunnel work. As it is being driven down, men within it shovel the earth into buckets, which are constantly being hoisted up and emptied. In order to prevent the caisson being filled with water which naturally constantly trickles in at the lower open end, air must be pumped in by means of a compressor engine in sufficient amount to keep the water out. The caisson is often supplied with an outer tube which is gradually filled with concrete so the whole caisson will sink by its own weight, and when it once has reached the required depth, preferably resting on rock, it is itself filled and thus becomes the permanent foundation. While the work is in progress and high air pressure must be maintained to keep water out, there is at the upper end of the caisson a closed iron chamber, A, provided with sliding doors in its floor and roof for the passage of buckets. As seen in the accompanying illustration (Fig. 1) of a caisson used in bridge work at Newcastle-on-Tyne, England, this "material lock" A communicates on one side by means of door E with the "air lock" B, through which the men pass in and out. A man going to work enters the air lock through door F, which he can only open when the pressure inside is like that of the outside air. Then he closes the door and compressed air is forced in through the inlet valve G. When the pressure equals that in the caisson he can open door E, enter the caisson and lower himself to the bottom. On leaving he

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1. Philosoph. Trans. of the Royal Society of London, 1670 and 1672.

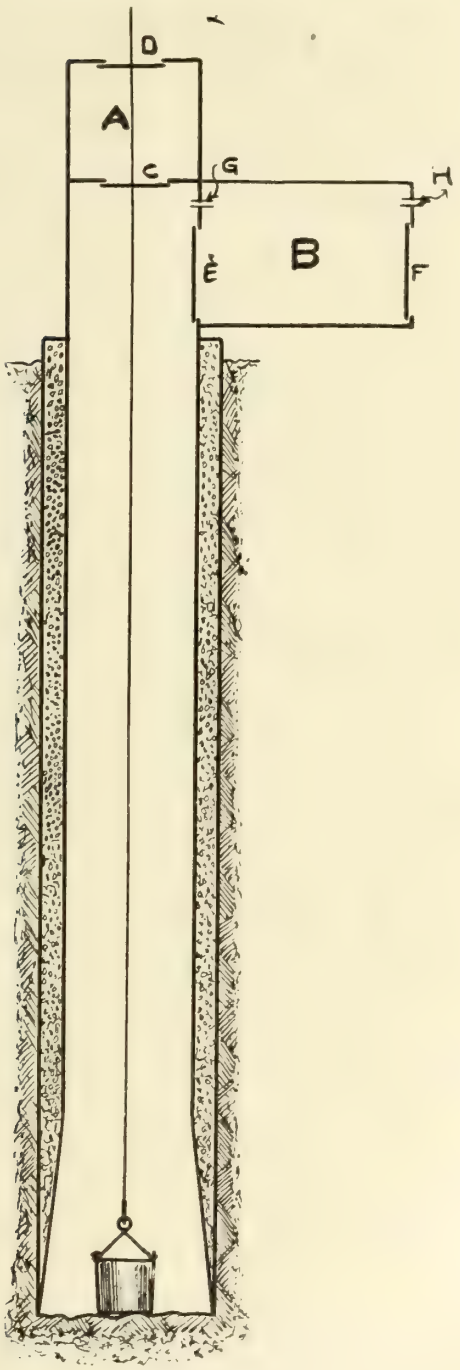


Diagram of caisson used for bridge over River Tyne. From Thomas Oliver, Diseases of Occupation, New York, 1908.

passes into the air lock again, shuts door E, and opens outlet valve H. When the pressure falls to normal door F can be opened. Air is forced into the caisson through another inlet valve.

Effects of Compression: As the air is pumped in there is apt to be a sensation of pressure on the ear drums which soon becomes a severe pain if air is not rapidly swallowed or forced into the tympanum by the Valsalva method. A person with impervious Eustachian tubes may have his drums ruptured if he does not leave in time. There is likely to be numbness of the lips, one becomes unable to whistle, there is a sensation of resistance to expiration and the voice becomes high-pitched. According to Erdman,[2] there are no constant changes in the rate of the pulse and respirations or in the blood pressure. When the maximum pressure has been reached, nothing disagreeable is likely to be felt; in fact, there is usually a feeling of exhilaration and increased strength, to which the fact has been attributed that the caisson worker, or "sand hog," as he is called among working men, feels happiest while in compressed air and is a poor worker under normal pressure.

Effects of Decompression: These are far more important than those of compression, and practically all cases of disease originate in too rapid reduction of pressure. The onset of symptoms is usually after normal pressure has been reached. Of 1,419 cases of various types of caisson disease observed by Erdman among the 3,500 workers on the Hudson tunnels, 43 per cent. came on within half an hour, 32 per cent. between one-half and one hour after leaving the caisson, or 75 per cent. within the first hour. The most common phenomena are severe pains in the limbs, chiefly the lower ones, called the "bends," vertigo, known as the "staggers," more rarely dyspnea, the "chokes." Fortunately paralysis, anesthesias and other severe nervous symptoms likely to become permanent are relatively rare. Thus, only 1 per cent. of Erdman's cases had a true paralysis, while pains in the legs were found in 74 per cent. and in the arms in 38 per cent., abdominal pains in 5 per cent., vertigo in 7 per cent.

Silberstern[3] gives statistics of 190 well-studied instances of disease occurring in Vienna. The additional pressure was as high as 2.7 atmospheres. There were 94 cases of pains in muscles and joints, all of which recovered; 35 cases of spinal cord paralysis and "angioparalytic disturbances," with 34 recoveries, while one remained permanently crippled; 17 cases of Ménière's syndrome, with 12 recoveries, 5 completely disabled; 5 cases of other cerebral disturbances, with 4 recoveries and 1 complete disability; 12 cases of asphyxia, with 10 recoveries and 2 deaths; 27 cases of disease of the drum or middle ear, with 26 recoveries and 1 partial disability. (Eleven were cases of hyperemia or extravasation of the drum, 12 hemorrhages into the tympanum, 3 myringitis, 1 suppurative otitis media.)

Fatality: Before proper precautions came into general use death soon after emerging from a caisson was of frequent occurrence. Thus, according to Rubner,[4] an English company lost 10 of 24 men in one year.

2. Jour. A. M. A., 1907, xlix, 1665.
3. Weyl: Handb. der Arbeiterkrankh., Jena, 1908, p. 612.
4. Lehrb. der Hygiene, 1907, Ed. 8, p. 48.

Thomas Oliver[5] states that at the building of the Brooklyn bridge there were 110 cases, with 3 deaths, and that of 600 men employed on the St. Louis bridge 119 had caisson disease and 14 died. At the first Hudson tunnel there were 12 deaths in one year among the 45 to 50 men employed, i. e., about 25 per cent. mortality, which sank to less than 1 per cent. after a "medical lock" was put in use. The Firth-of-Forth bridge in Scotland, the Blackwall tunnel under the Thames at London and the Baker Street and Waterloo Railway tunnel (the "Bakerloo Tube") were constructed without any fatality.

Most deaths occur within a day or a few days of the onset. Some patients die later from infection arising in connection with urinary retention or bedsores in cases of cord disease which give the clinical picture of disseminated myelitis. Varying degrees of paralysis or sphincter disturbance or Ménière's disease with permanent deafness may be left behind.

Pathologic Anatomy and Pathogenesis: It has been a recognized fact for a long time that the serious symptoms occur during or after return to normal pressure, and the long drawn out controversy concerning the genesis of the symptoms must now be considered settled in favor of the air bubble theory already introduced over 200 years ago, as has been mentioned in the beginning of this paper. In 1857 Hoppe-Seyler independently evolved this theory on the basis of his own experiments, as he was ignorant of the earlier work of Boyle and Van Musschenbroeck. Still more elaborate and convincing was the work of Paul Bert,[6] whose book appeared in 1878. He brought out all essential facts known to-day both regarding etiology, symptoms and prophylaxis. In the large book by Heller, Mager and Schrötter[7] all previous work is thoroughly reviewed and many new clinical, anatomical and experimental data added. They fully endorse Paul Bert on every point, including his contention that nitrogen is the main factor in causing trouble. Their summary is as follows:

"After rapid decompression free gas may be found in the circulatory system. This gas is nearly altogether nitrogen. If the sojourn in compressed air has been sufficiently long and the decompression rapid pathologic phenomena occur which may be grouped as follows: 1. Severe affections of the heart and lungs which may cause death directly. 2. Disturbances of the central nervous system, chiefly the cord. All those occurrences are due to the presence of free gas in the circulatory system, the cord symptoms being due to gas bubbles in the arteries leading to the formation of multiple foci of necrosis. The phenomena after decompression may generally be removed by recompression, the paralytic phenomena, however, only if textural changes have not yet commenced. The benefit derived from recompression depends upon the shortness of the period between the appearance of symptoms and the recompression, also on the degree and duration of the previous compression. Inhalation of oxygen is of importance as it directly improves the heart action and respiration and thus indirectly aids in the elimination of nitrogen from the tissues."

Catsaras, in his extensive work (Paris, 1890) on the similar affection among Greek sponge divers, also endorses the air bubble theory. Heller, Mager and Schrötter have compiled 137 reported deaths from compressed air illness, 41 in divers and 96 in caisson workers, with 45

5. Dangerous Trades, London, 1902.
6. La pression barometrique, Paris, 1878.
7. Die Luftdruckerkrankungen, Wien., 1900.

necropsies. In 70 of the cases with 27 necropsies, death occurred within 48 hours of the onset, in 36 cases longer time had elapsed, while in the remaining ones exact data could not be obtained. In 18 of the 27 necropsies in early cases there are fairly complete records. In 9 evidence of air embolism was found, in most of them sufficiently convincing to exclude the likelihood of invasion by the *Bacillus acrogenes capsulatus* or other gas-producing organisms with which the earlier observers probably were not familiar. In the cases without air bubbles there was evidence of passive congestion, such as hyperemia, edema or hemorrhage of the lungs, distended veins in the abdominal viscera and other signs of heart failure ascribed to the heavy work performed in ridding the blood of the excess of air within it. In the second group, death after two days, the chief findings were foci of ischemic necrosis in the cord and such terminal lesions as cystitis, pyelitis, decubitus and pyemia. It is noteworthy that cases resulted fatally in which apparently sufficiently long time was used in decompression, in one case thirty minutes for an over pressure of 2.3 atmospheres; in another forty-five minutes for 3.5 atmospheres, and that serious symptoms set in as long as six or seven hours after decompression.

Erdman had 7 necropsies in his New York cases. "Free bubbles or collections of gas were found in the blood in all five cases in which necropsy was performed within eighteen hours after death. The two delayed cases showed no free bubbles." In most of his fatal cases death had occurred within twenty-four hours. Two patients with myelitis and paraplegia succumbed from septic complications after several months.

The pathology of caisson disease is thus seen to be very simple and readily understood if we apply Dalton's law, that the amount of gas in a liquid is proportionate to the pressure of that gas in the atmosphere to which the liquid is exposed. During compression a much increased amount of gas can be held. If decompression is too rapid, gas, in this case mainly nitrogen, is set free and may cause mechanical injury, resulting in various symptoms. The frequency of lesions in the lower part of the spinal cord has been ascribed to "the greater length, tortuosity and attenuated condition of the small blood vessels in this region."[8]

Prophylaxis: The following are the chief points agreed on by all authors: 1. Selection of men. Young men should be preferred, and in many places men over 40 have not been accepted. Snell,[9] among the workers on the Blackwall Tunnel, found no cases of illness among 55 men between the ages of 15 and 20; among 145 men between 20 and 25, 10 per cent., were affected; among 302 between 25 and 40, 23 per cent.; among 38 between 40 and 45, 26 per cent.; 3 men between 45 and 50 were taken ill five times, or 166 per cent. Pelton[10] lays stress on a preliminary physical examination, accepting men between 20 and 35 only, and excluding all showing evidence of cardiac, arterial, pulmonary, hepatic or renal disease. He particularly warns against accepting men with signs of status lymphaticus, while he is more lenient as to alcohol-

8. Moxon: Cited by Oliver, l.c., p. 747.
9. Compressed Air Illness, London, 1896.
10. Amer. Jour. Med. Sc., 1907, cxxxiii, 679.

ism, largely for the practical reason that otherwise it would be difficult to secure enough workers. As before stated, men with disease of the upper air passages or ears are likely to get into trouble during the comparatively harmless stage of compression, and will probably give up the work on the first attempt if not rejected beforehand. 2. The degree and duration of compression must be in inverse proportion and the length of shift regulated accordingly. 3. Sufficient time must be given for decompression. Abundant experience has shown this to be the most important point. In this connection it is well to bear in mind that caisson disease is not a chronic disease in the proper sense, but the result of a trauma produced by liberation of air bubbles and rupture of minute vessels. If such trauma is guarded against, no caisson disease will occur in men who spend their lifetime at this work, while one single act of carelessness may cripple for life or cause death. It is commonly agreed that it is unsafe to lower the pressure more than two pounds per minute, or one atmosphere in eight minutes. The only modification of this rule which may be accepted, though not without some risk, is that the first half of decompression may be a little more rapid and that individual men after long experience may learn that they can safely come out more rapidly. However, permitting of exception soon leads to carelessness, and it is best to have a rigid, even automatic regulation which makes more rapid exit impossible.

Warm, dry clothing and a drink of hot coffee or soup should be provided on reaching normal air pressure, while beer and other cold drinks should be avoided for some hours.

It is also of importance to furnish an ample supply of air in the caisson, as an undue amount of carbonic acid and the frequent presence of hydrogen sulphid and carbon monoxid lower the workers' resistance to actual caisson disease. Snell observed fewer cases of this illness when ample air was furnished. Only electric light should be used in caissons. Sudden changes in pressure within the caisson must be guarded against, such as sudden rise when a compact stratum of soil is encountered which prevents the escape of air at the lower end. A safety valve will guard against this. Sudden fall of pressure from rupture of the air conducting tube, or, worst of all, instantaneous decompression from rupture of the caisson itself, must be rigidly guarded against, as well as sudden tilting or sinking of it.

Treatment: The time to institute proper treatment is the moment when symptoms appear, which, it will be remembered, is usually within an hour of leaving the compressed air. Their appearance is a sign that the blood contains more gas than it is able to hold in solution and that serious trauma is imminent if the gas is not promptly redissolved. This is readily accomplished if the pressure is raised; that is, by "recompression" of the patient. For this purpose it is essential and should be obligatory to have in readiness a special, so-called medical or hospital lock, and to instruct the men to hurry to it just as soon as they begin to be uncomfortable. Such a lock usually consists of two chambers, the innermost of

which is supplied with cots on which the patient may rest until he feels relieved, when he is slowly decompressed. Sometimes a patient has to return several times before he is adjusted to ordinary pressure. Even complete paraplegia often clears up completely by this method. Thus, of Erdman's 21 cases of paralysis 13 were entirely relieved by one recompression, 4 cleared up in from one to ten days, 2 in from two to six months, while 3 resulted fatally from subsequent septic complications. Recompression is the only form of treatment which is "specific" for caisson disease. In cases of persistent symptoms due to permanent lesions they are to be treated according to general principles.

Is a special law governing this work necessary? There is no statute of the State of Illinois and no ordinance of the City of Chicago prescribing safety appliances and regulations for this dangerous work according to information kindly given the writer by Chief Factory Inspector E. T. Davies. Nevertheless, although considerable work is done under compressed air in Chicago, we hear of few cases of illness. Naturally employers try to protect themselves against damage suits, and it is also in their interest to avoid accidents in order not to frighten men away from this kind of work and thus be forced to raise wages. The workingmen, through their unions, also often insist on certain precautions. The following reply to an inquiry by Heller, Mager and Schrötter received from the corps of engineers of the U. S. Army, dated Jan. 20, 1896, indicates fairly well the present attitude of public opinion in this country, where special protective legislation is looked at more or less askance and often denounced as "paternalism":

"The general government has not established any rules governing this class of work and any regulations that might be adopted would be under state or local authorities. The main reliance against any violation of known precautions in work of this class is the common law principle that contractors and corporations are liable for any damage done to individuals if they can show culpable neglect. For this reason all contractors adopt such regulations and rules as are proven by experience to be essential to protect themselves from suits for damages being brought against them. Another reason, aside from the humanitarian one of preserving life is the fact that if a work gains the reputation of being dangerous to health or life, no help can be procured except at very high rates of pay." (Signed by H. W. Kuehnle, Asst. Engineer.)

While personally in favor of legalized safeguards for dangerous work and of a rigorous employers' liability law, the writer feels that we are here dealing with such definite factors that the common law attitude given in this letter ought to suffice in the presence of enlightened public opinion and proper administration of justice. After all, it is public opinion which really rules; otherwise we would not have so many dead laws on our statutes and so much unwritten law governing our actual conduct. With our present knowledge of the dangers and necessary precautions, it ought to be easy to guard against accidents and to place responsibility where it belongs.

Caisson disease being preventable, suits for damages or criminal prosecution are likely to come up in connection with many cases. Here is a field where medical men may do much good toward furthering justice to

the workers in this and other dangerous trades if the great honest majority in the profession would take steps to prevent a few unscrupulous members from being ready with the kind of expert testimony requested by the party guilty of neglect. Reform of our antiquated and demoralizing expert system would indirectly aid in the fight against preventable industrial accidents and diseases.

34 Washington Street.

Book Notices.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Ninth revised edition. Octavo of 1326 pages, fully illustrated. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $5.50 net; half morocco, $7.00 net.

A work which has undergone sixteen reprints or revisions in twelve years speaks for itself and undoubtedly shows the appreciation in which Anders' Practice of Medicine is held. In this the ninth edition the author's aim has been to add the most important practical defences and at the same time eliminate what has become more or less obsolete. Controversial points have been for the most part omitted from consideration. One peculiarity which marks this from many Practices is that particular attention is paid to the treatment of disease. This peculiarity will appeal to most physicians as well as patients, for after all the treatment of symptoms is a very large part of the practice of medicine. The work can be recommended in the highest terms to our readers.

Preparatory and After Treatment in Operative Cases. By Herman A. Haubold, M.D., Clinical Professor of Surgery and Demonstrator of Operative Surgery, New York University and Bellevue Hospital, Medical College, New York; with 429 illustrations. Price, $6.00 net. D. Appleton & Co., 1910.

Professor Haubold has added a very practical volume upon a subject which has of necessity been ignored in the ordinary surgical works. We find much in the volume to note and little to criticise. It is hard to understand why Sand's needle holder is still illustrated and why the French metal clips for closing skin wounds are omitted. In most every regard, however, the work is complete and up-to-date and can be recommended to the profession.

The St. Clair County Medical Society, at its meeting recently, passed the following resolution, which would seem to indicate that the Southern Illinois brethren are standing pat on the important matters now engaging the attention of the medical profession:

Resolved, That the St. Clair County Medical Society appreciates the value of organization to the medical profession; that we recognize the benefit of the A. M. A. and give it our hearty indorsement in its efforts to better the conditions in our profession.

Resolved, That we recommend to our delegates to the state medical society that they give their support to the A. M. A. regardless of personal prejudices.

Chas. H. Starkel.
C. W. Lillie,
A. E. Hausing,
} Committee.

PRELIMINARY PROGRAM*

ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, TO BE HELD AT DANVILLE, MAY 17, 18, 19, 1910.

Oration in Surgery, "Surgical Aspects of Cancer with a Further Report on the Hemolytic Test." George W. Crile, Cleveland, Ohio.

Oration in Medicine, "The Future in Medicine," Charles G. Stockton, Buffalo, N. Y.

1. Uterine Fibroids Complicating Pregnancy Requiring Operative Interference. C. E. Wilkinson, Danville.

Discussion opened by Casey Culbertson, Chicago.

2. The Medical Treatment of the Pelvic Diseases of Women, from the Standpoint of the Surgeon, J. F. Percy, Galesburg.

Abstract:—The borderline between medical and surgical pelvic cases. The indications and contraindications for local medical treatment. The treatment by rest. The treatment by medical agents, both general and local. Permanency of the results of medical treatment in this class of cases.

Discussion opened by Clifford U. Collins, Peoria.

3. Observations in Two Thousand Blood Examinations for Hemameba Malariæ, T. M. Aderhold, Zeigler, Ill.

Abstract:—1. Necessity of making blood examinations for hemameba malaria to clear the diagnosis of other diseases in malarial localities. 2. Diagnosis of malaria. Finding of organism only certain diagnosis. 3. Relapses in malaria: a. Cases relapsing during the same season. b. Cases relapsing from one season to another. c. Cases relapsing from one season to another and during the same season. 4. How long does it take the organism to disappear from the blood under 30 grains of quinin per day. 5. Observations on cases under 12 years of age. 6. Observations in obstetrical cases. 7. General conclusions.

Discussion opened by A. R. Edwards, Chicago.

4. Some Diabetic Obiter Dicta, S. T. Robinson, Edwardsville, Ill.

Abstract:—A rapid survey of general medicine; great difference in scientific progress in special fields. Diseases of extrinsic or germ origin fast coming under control; those of intrinsic, degenerative or autotoxic origin, still most refractory. Hence, a rapid changing situation. Diabetes regarded as a type of the latter class. Present status of its drug treatment is discussed; pessimistic conclusion reached. Its successful management held to be largely dietetic; reasons suggested why, with present pathologic conception of its nature, nothing more can be expected. Much technique underlying the diabetic treatment. Some relations of proteid and carbohydrate to the disease and to each other are briefly touched upon; and with early diagnosis—the need of which is held to be as insistent as it is in tuberculosis—and sound diabetic methods, an optimistic conclusion is reached.

Discussion opened by R. T. Woodyatt, Chicago.

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1. The official program with the daily proceedings will appear in the May JOURNAL.

5. Unusual Case of Appendicitis, G. N. Kreider, Springfield.

Discussion to be opened by A. D. Bevan, Chicago.

6. The Leucocyte in the Diagnosis, Classification and Prognosis of Pulmonary Tuberculosis. J. F. Hultgen, Chicago.

Discussion will be opened by E. H. Butterfield, Ottawa.

7. Fat Embolism, with Report of a Fatal Case, E. A. Graham, Chicago.

Abstract:—Fat embolism has been recognized for a long time, but in recent years it has attracted so little attention that its clinical syndrome, although definite, is but little known. Formerly this condition was supposed to be associated only with fractures. The interesting experiments of Ribbert and others show that fractures represent only one element in its production. The supposedly high mortality associated with fat embolism is probably due to the fact that only severe cases attract attention. There is sufficient evidence at hand to warrant the assumption that the mortality is comparatively low. The clinical features, at least in the severe cases, are very definite and well marked. The manner in which death is produced is uncertain and is probably very complicated. Report of a case.

Discussion opened by Allen B. Kanavel, Chicago.

8. The Technic and Value of the Wassermann Test in the Diagnosis and Treatment of Syphilis, W. T. Mefford, Chicago.

Abstract:—1. The technic so simplified that all physicians can mix materials and define results. 2. By the test you are enabled to diagnose active syphilis in all stages, to know whether treatment is being carried on successfully and how long it should be continued or when to begin treatment in late syphilis. 3. Its greatest value is to the internist enabling him to differentiate many conditions presenting complicated clinical symptoms. Active syphilis is often present with many chronic or long drawn-out diseases as tuberculosis, diseases of the liver, typhoid fever and artery diseases, etc.

Discussion to be opened by F. G. Harris, Chicago.

9. Blastomycosis (Illustrated), A. M. Stober, Chicago.

Abstract:—Systemic blastomycosis. Prevalence of disease. Clinical manifestations. Brief review of etiology and pathology. Differential diagnosis. Treatment. Illustrated by lantern slides.

Discussion to be opened by Oliver Ormsby, Chicago.

Symposium upon Diseases of the Joints.

10. The Bacteriology and Pathology of Joint Infections, E. E. Irons, Chicago.

Abstract:—1. In addition to infections of the joints resulting from trauma or direct extension from an adjacent focus of suppuration, or associated with certain specific diseases such as syphilis and tuberculosis, lesions of the joints, periosteum and tendon sheaths may occur in practically all the acute infectious diseases, either as an incident in the course of the disease or as a more or less remote sequel. Bacteriemia is demonstrable in these cases. Apparently localized pus infections may be accompanied by bacteriemia and arthritis. 2. Infections of serous surfaces: The pathologic changes in the joint depend upon the extent of involvement of the articular and periarticular tissues, the duration of the active stage of the infection and the relative virulence of the infecting agent. 3. Pathology of acute, and chronic infections. 4. Recent work on the etiology of more chronic forms of arthritis. Streptococcal and gonococcal infections. Anaerobic

infections. 5. The proliferative and degenerative types of arthritis deformans. Nutritional and infective etiologic factors. 6. Different infecting agents may cause chronic arthritides with identical pathologic findings. The practical assistance in treatment to be gained by a study of the etiologic factors in each case.

11. Acute Infections of Joints and Their Mechanical and Surgical Treatment, J. B. Murphy, Chicago.

Abstract:—All acute inflammations of the joint are invasions by the infective flora, not on the joint surface but in the deeper structures, and later invade the synovial surface. They are mostly cryptogenic and transmitted from distant foci of suppuration.

The causes of destruction of the joint following infection are: 1. The virulence of the micro-organism. 2. The minus resistance of the patient. 3. The tension under which the products of infection are held in the joint and subsynovial layers. 4. The interarticular pressure due to muscular contractions. 5. The duration of the action of these destructive elements.

How can the invasion of the joint be minimized? 1. By rendering the joint cavity sterile. 2. By increasing the local and constitutional resistance. 3. By relieving the interarticular tension on the infection products. 4. By overcoming the interarticular pressure of the muscular contraction.

What can be expected from the mechanical and surgical treatment of all infected joints other than those the result of a direct opening of the joint with infection and those communicating with the suppurating osteomyelitic cavities? 1. The period of inflammation can be reduced in the active stage to a few days. 2. The destruction of the synovial membrane can be avoided. 3. The deformities can practically all be overcome and are all the sequence of inadequate treatment. 4. Ankylosis can be avoided.

In the exceptional cases mentioned above where ankylosis results, deformities should not prevail and are avoidable to a very great degree. These ankylosed cases can have the function of the joint restored by a proper surgical technic.

12. Neurological Considerations of Joint Diseases, Archibald Church, Chicago.

Abstract:—The anatomic relations of joints and muscles which actuate the joints with the general mechanism of the nervous control, give rise to certain functional points which are of importance in the consideration of joint disease. In other instances involvement of joints extends to nerve trunks in the vicinity, giving rise to symptoms of distal situation. These considerations are of particular importance in relation to neuritis secondary to joint involvement, this giving rise to neuritis due to the involvement of the filaments of the nerves within the joints and leading to secondary muscle wastings above the joints and secondly to the wasting below the joints when the nerves which pass the joints are implicated.

Another group of joint disorders essentially hysterical in character, without any evidence of involvement of joint surface or joint mechanism present features of distinctive significance. This condition may also be associated with actual joint lesions.

The general relation of polyarthritis and deforming arthritis to the nervous system, the question for solution being whether they are primary or secondary nerves on the one hand, or purely dependent upon the errors of metabolism or autointoxication on the other.

13. Joint Diseases from the Orthopedic Standpoint, John Ridlon, Chicago.

Abstract:—The mechanical treatment of joint diseases is mainly confined to the treatment of tuberculous joints and to the deformities resulting from joint tuberculosis and other infections. In considering the mechanical treatment of tuberculous joint diseases the general principles will be discussed, together with the relative value of fixation, traction, protection during certain stages and the stimulating value of use of the joint during other stages of the case.

In considering the mechanical corrections of deformed joints those still diseased will be separated from those no longer diseased; and of the latter class which may and which may not be safely corrected without cutting operations other than occasionally subcutaneous tenotomies and myotomies.

A few words will also be said about immobilizing acutely infected joints and joints that have been subjected to operative procedures, particularly as to the position in which the joint ought to be placed to avoid deformity and ankylosis and to give the best possible function to the limb in case true or false ankylosis ultimately results.

Discussion opened by A. J. Ochsner and Frank Billings, Chicago.

14. Pellagra. George W. Webster, Chicago.

Astract:—Definition: History of the disease abroad and in this country. Etiology and pathology. Theories. Diagnosis. Prognosis. Treatment. Problems.

Discussion will be opened by L. G. Pollock, Dunning, Ill.

15. Bile Tract Infection, J. E. Coleman, Canton.

Abstract:—The great number of unsuspected gall-stones found post-mortem show that more care should be observed by the practitioner in the diagnosis of gall tract infections, which always precede gall-stones and whose symptoms are usually attributed to biliousness.

Gall tract infection then is first a medical, then a surgical, then a medical disease and should receive careful medical treatment before and after operation.

The case should be referred to the surgeon for operation before adhesions and dangerous complications arise. This makes the operation a very safe one in competent hands.

The diagnosis can be materially aided by close observation of the stools of the suspected patient and by watching for evidences of degenerative changes in the heart and blood-vessels.

The practitioner should see to it that the heart tone is fully restored after operation, and this usually requires months of treatment. The surgeon is often responsible for this not being done by his nihilistic attitude to medicine.

Discussion to be opened by Drs. R. H. Babcock and D. N. Eisendrath.

16. Persistent Infections in Specific Urethritis in Relation to the Penile Urethra, B. C. Corbus, Chicago.

Abstract:—Persistent infections resulting from congenital malformations and secondary to localized infections are considered. The former may occur: 1. In the prepuce. 2. In the glans penis. 3. In the shaft of the penis. The latter may occur anywhere along the urethra but the most frequent site is just back of the glans penis on either side of the frenulum. Where there is an abnormality present, infections with the gonococcus are always more persistent and irregular.

Report of cases illustrating both types of infections. Treatment: Silver salts seem to have little effect as a curative agent. The result of antigonococcus serum and gonococcus vaccines. Suggestions in regard to the other measures. At present surgical treatment seems to offer the best results.

Discussion to be opened by Louis Schmidt, Chicago.

17. Ectopic Pregnancy, with Report of Fourteen Cases, E. C. Franning, Galesburg.

Abstract:—Location, etiology, symptoms and treatment.

Discussion opened by J. Clarence Webster, Chicago.

18. Recent Contributions to Our Knowledge Concerning Sympathetic Ophthalmia, E. V. L. Brown, Chicago.

Abstract:—1. A characteristic infiltration of the iris, ciliary body and chorioidea has been found to be constantly present in the first eye (Fuchs, 1905)

and consists of plasma cells (McElroy, 1908). (Specimens.) 2. Transfer to the second eye does not take place along the optic nerves or by ciliary nerve irritation but through the general circulation (Roemer, 1903). 3. The specific micro-organism is first present in the general circulation and only becomes localized in the eye after the iris, ciliary body or chorioidea have been damaged by a wound or inflammation. It then first develops sufficient virility to attack the healthy chorioidea, etc., of the other eye. This endogenous theory (Meller, 1909) is revolutionary in character yet it better explains the peculiar localizations of the disease in the uvea and in certain parts of it; a long interval; the absence of any wound in certain cases (necrotic intraocular sarcomas) then does the prevailing exogenous "wound-infection theory." 4. Difficulties of diagnosis are great for general practitioners and for specialists alike; syphilis and tuberculosis must be excluded. 5. Prognosis is not "invariably bad;" statistics, cases of colleagues and writer. 6. Improvements in treatment; enucleation should help second eye, sodium salicylate in huge doses, mercurial inunctions, quiet to the tissues (no operations, no light, less atropin).

Discussion to be opened by Dr. Mathias, Galesburg.

19. Fracture-Dislocation of the Atlas and Axis, Carl E. Black, Jacksonville.

Abstract:—This paper will consist of the report of a case in which operative reduction was adopted. It will call attention to the essential diagnostic points and will give some reasons why operative interference has not been adopted more frequently. It will give a synopsis of the recent literature on this subject and especially of those articles which contain reports of cases.

Discussion to be opened by J. B. Murphy, Chicago.

20. The Rationale of Infections of the Nasal Accessory Sinuses, William L. Ballenger, Chicago.

Abstract:—The etiology of infection and inflammation of the mucous membrane of the nasal accessory sinuses should be studied under two general headings, viz., (1) active causes, and (2) predisposing causes. 1. The active cause is almost always one or more type of pathogenic micro-organism, though in exceptional instances it may be due to traumatism, an external violence, caustics, hot irrigations, steam, irritating inhalations, etc. 2. The predisposing causes are numerous though an obstructive lesion of the nose (especially in chronic infection) is an almost constant factor. In primary acute sinuitis obstructive lesions are not so constantly present.

Discussion to be opened by Dr. Marcy, Peoria.

21. A Practical Measure in the Prophylaxis of Postoperative Cystics, E. C. Dudley, Chicago.

Discussion to be opened by Dr. Emil Ries, Chicago.

22. Bacteriemia, with Special Reference to Endocarditis, Edward C. Rosenow, Chicago.

Abstract:—The value of blood culture in endocarditis, typhoid and paratyphoid fevers, pneumonia and other infections. The importance of differentiating between bacteriemias with localization on the endocardium and those without. Abstracts of illustrative cases. Characteristics of micro-organisms most frequently found in acute and chronic infectious endocarditis.

Discussion to be opened by B. W. Sippy, Chicago.

23. Endocarditis, R. B. Preble, Chicago.

Discussion to be opened by J. B. Herrick, Chicago.

24. Early Efficient Surgical Treatment of Skull Fracture, F. E. Schurmeier, Elgin.

Abstract:—Scope of paper: Diagnosis. Skull fracture with pressure symptoms should be operated on early. Patient should have benefit of the doubt by doing an exploratory operation. Operation should not stop short of efficiency even when life of patient threatens to cease. Report of a few cases to illustrate the points in this paper. Remarks and conclusions derived from these cases.

Discussion to be opened by Drs. Center, Quincy, and F. A. Bealey, Chicago.

25. Gastro-intestinal Infections, J. W. VanDerslice, Chicago.

Abstract:—Gastrointestinal disorders are diseases of crowded centers of population. Prime etiologic factor the ingestion of improper food. Importance of fresh air and pure food as prophylactics. Summary of results of investigations in the bacteriology of these disorders. Diagnosis still made according to the region must involved. Value of examination of stools. Interpretations of findings. Systemic conditions and dystrophies due to focal infections of the alimentary canal.

Discussion to be opened by John Q. Roane, Carlyle, Ill.

26. Symptoms and Treatment of Exophthalmic Goiter, Cassius C. Rogers, Chicago.

Abstract:—Symptoms: Goiter, tremor, tachycardia, exophthalmos. These four symptoms are usually present, but one or more may be absent. Other symptoms are: mental disturbances, gastrointestinal, paralysis, impairment of vision, cardiac hypertrophy, hepatic, cough, nephritis, sweating.

Special attention should be given to the female pelvic organs. I have not found an exception in exophthalmic goiter where the patient has not suffered with either amenorrhea, dysmenorrhea or menorrhagia; the ovaries are always large and tender. Not infrequently are these cases operated on and one or both ovaries removed. Invariably this is followed by a severe attack of acute exophthalmos. Treatment: All acute cases should be considered as medical and never operated on until they have recovered or the disease has become chronic. Antithyroidin, rodagin and thyroidectin have an equal value in some cases, but are not curative agents. *X*-ray and high frequency currents have produced beneficial results.

Some cases apparently recover without treatment. There is no rule that can be followed in selecting the cases for operation. All acute cases and all cases with marked heart, liver and kidney changes are unfavorable to operation. The size of the goiter is not an index to the symptoms it may cause. Blood examination is of more value in acute than chronic thyroidism.

Discussion to be opened by J. W. Hamilton, Mt. Vernon; Carl B. Davis, Chicago. Dr. W. E. Walsh, Morris, will show during the discussion a cretin presenting symptoms of hyperthyroidism.

Psycopathic Symposium.

27. The Study of Mental Disorders, H. Douglas Singer, Hospital, Ill.

Astract:—History and development. Difficulties and problems. Need of closer cooperation between the medical profession as a whole and the officers of the state hospitals, and of better facilities for teaching in the medical schools.

28. The Borderline Psychoneuroses, E. L. Crouch, Jacksonville, Ill.

29. The Prevention and Treatment of Insanity, Eugen Cohn, Anna.

Abstract:—Prevention: Measures suggested for prevention of inherited and acquired predispositions. Dangers coincident with advance of civilization; great need of thorough and fearless education on these subjects; importance of social and philanthropic work; influence of environment; capacity of the young for education; selection of a vocation.

The preservation of physical health; removal of foci of irritation in the predisposed; avoidance of causes producing exhaustion and intoxication (endogenous and exogenous); especial watchfulness during physiologic epochs; better understanding of metabolism, especially in its relation to the nervous system.

Methods of education of the convalescents within institutions regarding health laws and ways with which to prevent the recurrence of attacks.

Treatment: Brief outline of methods found of value by the writer during his service in state hospitals; disappearance of custodial methods; introduction of strictly hospital methods; value of bed and rest treatment of all newly admitted cases, and in all acute outbreaks of the chronic; the trained nurse in the state hospital. Thorough understanding of the patient's physical state and removal, as far as possible, of all bodily disorders. Hydrotherapy, massage, phototherapy, psychotherapy, drugs; diet; use of the feeding tube; use of restraints; special methods for supplying greatest amount of outdoor air and freedom; effects of reassuring the homelike surroundings; systematic occupation and entertainment; exercises, calisthenics, music, etc., for the convalescent and chronic cases.

Special methods of reeducating the chronic insane.

Discussion to be opened by Frank P. Norbury, Kankakee.

30. Tuberculosis of the Ear, Throat and Nose, Arthur E. Prince and W. G. Bain, Springfield.

Discussion to be opened by C. W. Lillie, East St. Louis.

31. The Relations and Clinical Significance of the Urinary Acidity, Henry R. Harrower, Chicago.

Abstract:—The urinary acid index is a factor of considerably more importance than has up to the present been supposed. It seems to be a very good guide to the condition of the metabolism and serves as a definite pointer to needed therapy.

Excessive acidity of the urine is usually associated with certain phenomena which are considered to be commonly found with intestinal putrefaction and autointoxication. Then, too, there is often an accompanying diminution in the saline elements of the urine, in particular urea. The ammonia is increased.

Results of several hundred examinations show that excessive acidity, indican and low urea are commonly found together. Not infrequently are casts and other evidences of renal irritation found which disappear on satisfactorily reducing the excessive degree of urinary acidity. There is need for an appreciation of this factor, acidity, when considering the urinary findings in any case, no matter whether functional or organic. The main point in the clinical significance of excessive acidity is the proof of the presence of a markedly decreased metabolic activity with the possibility of an impending organic affection resulting therefrom. The study of the urinary acidity and its relations should receive much more attention for therein will surely be found many valuable clinical and therapeutic suggestions.

Discussion to be opened by Frank Billings, Chicago.

32. A Dressing for Colle's Frature. R. J. Christie, Quincy.

Abstract:—Review of various dressings in vogue; faults inherent in each; principle underlying correct treatment; reasons for failure to attain satisfactory results; argument sustaining new idea; illustrations presented.

Discussion to be opened by Carl E. Black, Jacksonville.

33. Report of Two Cases of Acute Perforating Gastric Ulcer Requiring Gastrojejunostomy as a Secondary Operation. J. E. Allaben, Rockford, Ill.

Discussion opened by M. L. Harris, Chicago.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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APRIL, 1910.

THE WEBSTER LETTER.

In another column will be found a communication from Dr. George W. Webster, *de facto* President of the Illinois State Board of Health. It will be seen that Dr. Webster claims that his veracity was questioned in certain editorial remarks appearing in the March issue of THE ILLINOIS MEDICAL JOURNAL. A careful reading of that editorial will show that only a vivid imagination could claim that the Doctor's personal veracity has been attacked. To his puerile assumption no answer seems necessary. From Dr. Webster's letter it appears that the statement to which he really takes exception is that the Illinois State Board of Health was held up to ridicule and placed in a most unenviable position during the conference, and that this was especially true during the delivery of Judge Olson's address. Dr. Webster cannot deny that he was impelled at the close of Judge Olson's address to rise and make a statement, during which he endeavored to shift the responsibility for the present condition of the law regulating the practice of medicine in the State of Illinois from the State Board of Health on to the shoulders of the Legis-

lature, the public and the medical profession. This, it seems to us, is the real subject under controversy. It is certain that Judge Olson did not compliment the State Board of Health. Much as we dislike to take issue with Dr. Webster, we are compelled to question the statements made by him in this communication over his own signature. We deny that House Bill 813 failed to become a law in 1907 because of lack of support of the medical profession through the apathy, indifference and inefficiency of the officers of the State Society and THE JOURNAL. We strenuously deny Dr. Webster's statement that all blame for present conditions "squarely belongs on the shoulders of the State Medical Society." There has been another session of the Legislature since 1907. As far as we know, no attempt was made by the Illinois State Board of Health to remedy the defect in the law of 1899 by the introduction of a bill fashioned after Section 6 of House Bill 813, which came so near (?) passing the 45th General Assembly. This, under ordinary circumstances, is sufficient reply to Dr. Webster's ill-tempered communication.

SOME OTHER ITEMS OF DR. WEBSTER'S LETTER WILL BEAR SCRUTINY.

According to Dr. Webster, the entire Council of the Illinois State Medical Society attended a conference held at the Great Northern Hotel, Chicago, on April 5, 1907. This is true, and it is also true that Dr. Webster did not attend this particular conference. Dr. Webster attended and presided over an adjourned meeting of that conference, which was attended by only two representatives of the Illinois State Medical Society, namely, Drs. M. L. Harris of Chicago and J. H. Stealy of Freeport. Why there was such a large attendance of gentlemen connected with the Illinois State Medical Society at the initial conference, which was called at the suggestion of Dr. J. F. Percy, then President of the Illinois State Medical Society, and why neither Dr. Percy nor any other representative of the State Society (outside of those two mentioned) failed to attend the adjourned conference, would be an interesting story. It has always been our understanding that the initial conference was so apparently dominated by the Secretary of the State Board of Health and his irregular cohorts and gave such little evidence of honest effort to carry out the purpose for which it was called, that these gentlemen did not think it worth while to be found in this conference a second time. At the first conference only committees were appointed and practically nothing was accomplished, and, judging from the printed reports of the adjourned conference as given in the April, 1907, *Bulletin of the Illinois State Board of Health*, the adjourned conference was equally barren of results.

It is true that certain hand-picked committees of Secretary Egan made reports, which were in every instance full of fulsome compliments of the State Board of Health that have since been industriously used by the Secretary for purposes of his own. Dr. Webster to the contrary notwithstanding, both conferences must be declared to be of little value to the people and the profession of Illinois. In neither of them was anything said about that feature of the law to which Dr. Webster refers.

There was also a meeting held in Springfield, April 30, 1907, attended by five gentlemen, including Secretary Egan. The discussion at this meeting, as at the conferences, appears to have been centered on the preliminary educational features of House Bill 813, and no attention seems to have been paid to the matter of giving the Board jurisdiction over its licentiates licensed prior to 1899. Now the matter of jurisdiction over licentiates licensed prior to 1899 is the sole subject under consideration in Dr. Webster's communication in this issue. Consequently Dr. Webster's references to the conference of April 5 and the adjourned conference of April 24 (which he does not mention) have no bearing on the subject under discussion.

Dr. Webster's attitude at this time is quite different from that taken by the Secretary at the meeting of the Illinois State Medical Society at Rockford May 21, 1907. As stated on page 55 of the July, 1907, ILLINOIS MEDICAL JOURNAL, Dr. Egan, then ignorant (?) of the fate of House Bill 813, proudly announced that in the 45th General Assembly, which at that time had adjourned, the medical profession had succeeded in securing the passage of every bill that they started out to pass and had also succeeded in preventing the passage of every bill which they had opposed.

In the *Bulletin of the Illinois State Board of Health,* April. 1907, on page 157, the Secretary says: "The State Board of Health fared well during this session. The Sanitary Law and Medical Practice Act, under which the present State Board of Health is organized, were much strengthened by amendments in bills introduced *at the instance of the Board.* As will be noted, *the appropriation to the Board was greatly increased.* All bills directly *opposed by the Board* failed of passage."

Bill 813 is mentioned on page 156 as having passed. On page 160 is the following language: "Certainly so far as obnoxious legislation in 1907 is concerned, the medical profession of Illinois has cause for congratulations." Further, on pages 160-161 of this *Bulletin,* is told in thrilling language how the bill passed, but did not pass. The Secretary was at luncheon, etc., etc.

On page 211 of the May-June issue, under the heading, *"Ways That Are Dark,"* is told how it all happened—the Secretary went to East St. Louis, etc.—and how Section 6 was lost in the shuffle. The account is too long to be copied here. It need only be said that the Illinois State Medical Society, its officers or THE JOURNAL certainly had nothing to do with the failure of House Bill 813 to pass in its entirety. We leave our readers to judge who was really responsible.

Judge Olson's statement, quoted by Dr. Webster, that the Board is helpless, does not apply to those licentiates licensed since 1899. Judge Olson knows a great many things about the Board, some of which he mentioned in his address, and with these we heartily agree. For instance, he said: "The machinery to enforce the medical license laws *should not be in the Board of Health.* That Board has its hands full with the question of public sanitation, quarantine and occasionally, it is said, *politics.*" Judge Olson probably does not know that since 1899 the

Board has licensed something near 6,500 practitioners. He probably does know, with us, that, as far as we can learn, not a single license has been "revoked for conduct involving immorality in the practice of medicine, and such offenses as dishonesty, conviction of crime, addiction to drug habits," etc., which he mentions. This is the real test of the efficiency of the Board in protecting the lives and health of the people of Illinois. In this the Board has not, in its history of the past ten years, measured up to its responsibilities.

ARE ELECTIONS IN THE CONSTITUENT BODIES OF THE AMERICAN MEDICAL ASSOCIATION FAIR AND LEGAL?

On page 499 appears another communication from Dr. G. Frank Lydston of Chicago criticizing the plan of organization of the American Medical Association and its constituent societies.

For many years a gentleman from Indiana sat in the national House of Representatives and so persistently raised his voice in opposition to the transactions of the public officers that he became known as "The Great Objector." It is probable that very often there was a reason for his objection, but it is hardly possible that everything coming under his condemnation was worthy of his objections.

We feel somehow that Dr. Lydston has contracted the objecting habit and that much of his writing is due to his ignorance of the history of the medical organizations of America or that he has an incorrect conception of the plan of organization of the profession. For instance, it seems that Dr. Lydston labors under the misconception that membership in the A. M. A. carries with it the right to vote. Such is not true now nor has it ever been true. The electoral body of the A. M. A. has been from the very beginning of the association, now more than 60 years, a delegated body and the delegates are the only ones who have ever had the right to vote. Before the reorganization almost any society—state, county or local—might send delegates to the national meeting, with the result that the delegated electoral body became so large, so changeful and so incoherent that little or nothing was accomplished.

Upon the reorganization the number of delegates was reduced to something like 150, thus forming a good working body, and the right to send delegates was confined to component state societies. The state societies were reorganized on the same plan, and the right to send delegates to the state society was vested in the component county societies. The individual members of the county societies vote directly for a delegate or delegates to the state society. The voting unit is, therefore, the member in good standing of the county society, and membership in the state society carries with it no extra voting privilege, nor does membership in the A. M. A. The principle is exactly the same as that involved in ordinary citizenship, where the citizen, or voting unit, votes for the state legislators and the state legislators vote for the national senators.

There is just as much sense in saying that every citizen should have the right to go to the state legislature or national senate and vote as there

is in Dr. Lydston's statement that there should be membership ballot in the state society and in the A. M. A.

Dr. Lydston's statements about the "illegal" voters who are non-members of the A. M. A. are, therefore, based on a total lack of knowledge of the facts. There are no "illegal" voters, provided they are members in good standing of component county societies, and evidently Dr. Lydston has not quite a clear understanding of this matter.

So far as the legality of the elections of the A. M. A. held outside of the state is concerned, it is only necessary to say that that matter was passed on some years ago by the best legal talent in Chicago, and it is safe to say the opinion thus obtained is worth more than that of Dr. Lydston.

Dr. Lydston further says: "The voting unit in the district or county society votes for a councilor or councilors" and that "the council votes for state delegates." These statements apply only to the Chicago Medical Society, which is so large, being larger than a great many state societies, that it has a small delegated body to transact its business. The councilors of the state society are elected by the House of Delegates.

Dr. Lydston writes of the "ludicrous political farce of the affiliated special societies of the A. M. A."

There are no affiliated special societies in the A. M. A. and have not been for ten years. He then mentions the affiliated societies in the Chicago Medical Society and attempts to convey the impression that this is the universal plan. As a matter of fact it applies only to Chicago and is not found in any other county society in this or any other state, and is a matter of purely local interest for which the A. M. A. is in no way responsible nor in any way concerned. The absurdity of his multiple votes "bogey" was discussed in our last issue. His *15* votes which he figures out one man might possess is an absurd impossibility, too puerile for an adult mind to consider, as is also his statement that the local trustee has *9* votes "for himself and his coterie of supporters."

The climax of absurdity is reached in the following: "The spectacle of officers of the A. M. A. serving as, first, councilors, second, state delegates, third, national delegates, is decidedly un-American and very disquieting to one who has pride of citizenship and believes in equal rights and fair play in our medical societies."

This sounds a little strange from a reformer (?) who is himself a councilor, a state delegate and a candidate for a national delegate. Just think, a chance to vote for himself three times and, if elected, he will be the only person under the Star-spangled Banner of the United States of America enjoying the distinction of occupying the three positions at the same time. Dr. Lydston's letter is in much better taste than most of the recent productions from his pen, and we congratulate him that he has thrown aside personal invective and confines himself to plain statements, even if he is mistaken as to his facts.

Some of Dr. Lydston's criticisms might have been applicable before the reorganization ten years ago, when some of the conditions he mentions prevailed, but, as none of them exist at the present time, he is just ten years behind time.

We hope that our members will not be misled by Dr. Lydston's well-rounded sentences, but will study this matter for themselves and convince themselves that Dr. Lydston, "the great objector," has much to learn of the plan which he attempts to criticize.

COUNTY SECRETARIES, ATTENTION.

Do not forget the annual conference of the county secretaries to be held during the session of the Illinois State Medical Society at Danville, May 17, 18 and 19. This is the third annual meeting of county secretaries and will be made the greatest meeting of all. It is impossible to estimate the value of these meetings of the county secretaries. The unit of organization of the Great Illinois State Medical Society is the County Society, and the life of the County Society depends upon the secretary. It is evident, therefore, to all our readers how important it is to have an energetic man as secretary of the County Society. It is equally true that the Secretaries must meet and confer with other Secretaries who are doing more or less work than he is. The officers of this Secretaries' Conference assure us that immense value has come to the organization and to the various secretaries from the conferences at the past two meetings. The interest in the work of the county Secretary must be stimulated among the membership of the various county societies to such an extent that they will use the best possible means in their selection of a man to fill that office, and that the man who is selected will feel responsible for his office to such an extent that he will be obliged to make good or lose his position. A good spirit of rivalry among the various societies is stimulating. The best showing that can be made does not necessarily mean the greatest number of attendance at a meeting, but the largest *percentage* of attendance and the quality of work done at the various meetings of the Society. We believe that recognition of good work done by the County Societies in form of a resolution or honor medals would be worth the consideration of the Council of the State Society. We hope that every secretary will attend this conference, and the members of the various societies will make provision, if necessary, that their secretaries can be present.

Do not forget the time is May 17, 18 and 19, and the place is Danville.

THE SIXTIETH ANNUAL MEETING AT DANVILLE.

For the second time in the entire history of the State Society a meeting is to be held on the eastern border of the state. The previous meeting was held at Paris in 1860, just 50 years ago, and was presided over by Dr. David Prince of Jacksonville. Dr. N. S. Davis of Chicago—of blessed memory—was the secretary, and the War of the Rebellion had not yet interrupted the labors of the society, which began only ten years before. The meetings of 1861 and 1862 were abandoned because so many of the members were engaged with the troops at the front.

It will prove of great interest, therefore, to physicians in the eastern part of the state to have a second meeting in that territory, half a century after the holding of the first meeting.

The members of the Vermilion County Medical Society are making every effort to have a grand success of the meeting. The chairmen and secretaries of the sections report a large number of papers already prepared, and the prospects for a successful literary and scientific program are of the best.

Besides, there is considerable interest in another direction which is likely to bring out a great many members to witness and take part in the proceedings of the House of Delegates. We believe there is enough solid, common sense in the membership of the Illinois State Medical Society to see that justice is done to all the members, and at the same time that the best interests of the profession are not forgotten.

Danville is easily accessible from Chicago and all other parts of the state, and there should be not less than 500 members in attendance. Please remember the date—May 17, 18 and 19—and be on hand.

CORRECTION OF NEWS ITEM.

Dr. Arthur D. Bevan calls attention to certain statements made on page 401 of our March JOURNAL which were attributed to him, but which he did not make. Several of these statements as given were made by Dr. H. S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching. The statements may have been slightly exaggerated in the columns of the daily paper from which they were clipped, but as given on page 401 they were substantially true as printed.

Correspondence.

SOME FACTS ABOUT THE ILLINOIS STATE BOARD OF HEALTH.

To the Editor of THE ILLINOIS MEDICAL JOURNAL:—The letter of Dr. Egan in the March issue has an especial interest to the writer because it has back of it much that the profession in this state has been kept in ignorance of too long. I am violating no confidence when I say that the Judicial Council of the Illinois State Medical Society since 1902 have each year had before them the question as to whether or no they would go before the profession and post it as to the real medico-political situation in this state, and each year, after a careful canvass, it seemed best in the interests of the medical profession of the state as a whole to withhold this knowledge yet a little longer. I may say that a minority of the Council have questioned the wisdom of this. But this same minority has at no time been certain that the views of the majority of the members of the Council were not, after all, the best to follow and have thus acquiesced in the final view that the profession and the public would get more of what was their due if we did not raise a "stink."

Personally, I think Dr. Egan has done a service more far-reaching than he knows when he attacked Dr. Carl Black, chairman of the Council, for any relationship that he may have assumed toward the resolutions inspired by President Wiggins and introduced before and carried by the Southern Illinois Medical Association. By doing this, Dr. Egan justifies the minority views of the Council, viz., to tell the profession the facts, letting them do the rest. I may say that at each yearly meeting of the Council, up to and even preceding the days of Governor Yates until the present, a gradually increasing sentiment has developed that the profession is being betrayed by the executive officer as well as by the president of the Illinois State Board of Health. Each year the Council has been thwarted in its purpose by the political friends of governors. These have usually succeeded in smothering any possible action recommended to the state society by Council by the specious promise that our efforts to better the medical conditions in the state would be recognized and acted upon if we would not "injure his administration by hasty and ill-advised action at that time." But each succeeding administration has but repeated the history of the preceding one as far as the medical profession of this state is concerned. All of the above was peculiarly true at the last Peoria (1908) meeting of the state society. A report was ready for presentation to the house of delegates by the chairman of the Council, and resolutions which would make the recommendations of the Council effective if acted upon favorably, were put to sleep because friends of Governor Deneen in the state society urged that the governor had not a vote to spare and that if the Council advised the state society to pass these resolutions it would mean the political death of the governor.

The report of the Council and the resolutions based upon them covered the general inefficiency, as a scientific body, of the State Board of Health in its relationship to the people and the medical profession of this state. Instead of this, resolutions were passed which said nothing about the State Board of Health, but which did endorse Governor Deneen for his supposed practical interest in the eleemosynary institutions of the state. The governor was elected by a small margin and yet the writer, within his own hearing, and that of several other members of the Council of the Illinois State Medical Society, heard Governor Deneen, within a few months, say that as a political asset the medical profession was not worth a whoop because "they would not stay put." The present controversy regarding the State Board of Health has been made more acute because of the present governor's failure to keep his promise, made a number of times to the Council, to take immediate steps to improve this branch of the state government and to bring it up to what obtains in other states. It is not the purpose of this letter, however, to discuss the relationship of our state society to the political powers of the State of Illinois, important as that is to every physician in the state, but rather to discuss Dr. Egan and Dr. Webster, as I have known them since I became interested in the ideals and hopes of the physicians of this state as expressed through the Illinois State Medical Society. I do this on no personal grounds.

As far as I am concerned, my position in the profession will be made no better and certainly no worse whether these gentlemen remain or are removed from their present position. But there are a lot of physicians who are touched by the present conditions in the Illinois State Board of Health, especially if they should try to leave the state for new professional fields in other states. It might be well to state that there are many physicians who look upon the present controversy as merely a personal "scrap" between the editor of THE ILLINOIS MEDICAL JOURNAL and the executive officer of the State Board of Health, little knowing that if the editor has seemingly given a personal touch to his writings he knows a lot more than he has ever been allowed to say by the publication committee of the Council. The Council, since I was a member of it, has always known that both Dr. Egan and Dr. Webster were not real friends of the medical profession. Editor Kreider and the minority members of the Council have really chafed under the restraint that political exigencies seemed to rightfully put upon them. This letter is to be an evidence of the fact that the Council, while present conditions obtain in the State Board of Health, are going to give the facts to the profession at large.

Before any member of the state society attempts to assume that this agitation in THE ILLINOIS MEDICAL JOURNAL, now really beginning against the State Board of Health, is merely based on personal grounds, let him hear the side which he has not heard, either from Drs. Egan or Webster. The whole controversy, it seems to me, should hinge upon but one question. It is this: Are Drs. Egan and Webster true friends of the medical profession in Illinois, voicing its highest ideals, encouraging better work and protecting the physicians in it, to the end that the people of the state may get the best that the profession has to offer? If they are, then this agitation is uncalled for; more than this, it is mean; yea, verily, it is contemptible and dirty. Recognition in the highest and best sense is the hunger of every human soul. But, unfortunately, some leaders of men want the recognition, but are not willing to give an equivalent for it. If I did not believe honestly and earnestly that this latter statement was true of the executive officers of the State Board of Health, I would not be taking the time of either the profession of this state or my own to write this letter.

In 1901 the Judicial Council, which is the materialistic side of the state society, began to interest itself actively in the political affairs of the state as they applied to the medical profession (see THE ILLINOIS MEDICAL JOURNAL, vol. iv, p. 261, 1902-3). Dr. Egan, secretary of the Illinois State Board of Health, has the honor of initiating this movement. At the Quincy meeting (1902) he reported to the late Dr. Cook, chairman of the Council, and the writer, who was then secretary of that body, that Mr. O. F. Berry, who was seeking re-election as senator from his district, "was a most *dangerous* member of the senate for the medical profession to have in it and that we should use every means possible to defeat him if nominated." Dr. Egan seemed so thoroughly in earnest about the matter that the chairman, Dr. Cook, deemed it of sufficient importance to bring the matter before the Council and to ask for instructions. This was done at the Quincy meeting and as a result the Council

authorized Dr. Cook to investigate the charges made against Senator Berry and if they were found true to take up the political side of the question with the members of the medical profession in Senator Berry's district. Dr. Cook did make such an investigation, in which he was aided by Dr. Egan, and as a result it was learned that all Dr. Egan had claimed for Senator Berry's attempts to induce Governor Tanner to sign the Osteopathic bill while a paid member of the senate, was true. So far, so good. But Dr. Egan "did not stay put." He sold us out with the help of Dr. Geo. W. Webster, the president of this state board. It is not necessary for my present purpose to more than mention the fact. The record can be found in THE ILLINOIS MEDICAL JOURNAL, vol. v, p. 101, 1903-04. Before this experience the Council was in doubt only as to the real attitude of the State Board of Health toward the physicians of the state. After that experience the Council had no doubt as to what they could expect from the Board as between the physicians of the state and all the interests that were allied against them.

Nothing has happened since the Quincy meeting above referred to that in any measure has changed the belief of the members of the Council that the present executive officers of the State Board of Health would do otherwise than was done at that time should the opportunity again present itself to "do" the profession. But I must repeat that the Council erred in not reporting these facts more thoroughly to the profession of the state. Had it done so the present to be deplored attitude of these two important bodies in the body politic toward each other would not be what it is.

Some years ago at Macomb, Ill., the physicians present were interested, not to say startled, by a statement made by President Webster, in a public address, that the State Board of Health was organized to protect the people of the state from the medical profession, as if the people of the state needed any protection from that source. Dr. Webster has reiterated this statement many times since that public address. In a letter to President Wiggins, in reply to one addressed to the president by Dr. Webster, as recently as Feb. 11, 1910, is found this: "You speak of the 'rights of the society in molding the policies of the Board,' etc. It is my understanding that the Board was created and is maintained in the interests of the people, and *not* of the profession, and to protect the former against incompetency and fraud on the part of the latter." To quote further from the same letter: "The license and control of the practice of medicine is rightfully regarded as a legitimate exercise of the police power, the members of the State Board of Health being the delegated agents of the public, and *not* of the profession, the class benefits resulting to the medical profession being merely incidental and not intentional."

But are Drs. Webster and Egan, as executive officers of the State Board of Health, protecting the people from the profession? No, they are not. The writer a few years ago, in company with Drs. Frank P. Norbury and Louis Mix, investigated the medical colleges of Chicago and found conditions that were beyond belief. "Laboratories," that would not pass muster as chicken coops on a moderately well-regulated

farm in Ilinois, were found without apparatus or even water and but a single gas jet—dirty windows, admitting no sunlight; a few low benches, looking as if they had been filched from some country school house, and twelve young men in this particular room, all of them being deluded into the belief that they were being taught scientific medicine. This was in one of the day medical schools. My description would not be complete without my saying that my first impulse on seeing the embryo M.D.'s in this room was to go out immediately and bring each of them a cake of soap and a towel. And yet President Webster says that the chief duty of the State Board of Health is to protect the people against the "incompetency and fraud" of the medical profession. That the State Board of Health is not protecting the people against "incompetency and fraud" is a self-evident fact. I would like to ask Drs. Egan and Webster to give a concrete statement of the things accomplished by the present Board. Any one that criticizes the Board constructively, either in the public prints or in private conversation, is merely told that they are "visionary" idealists whose proposed methods would accomplish nothing.

During my term as president I suggested to Dr. Webster that we discuss these matters in THE ILLINOIS MEDICAL JOURNAL, especially the one of reciprocity between the states for the qualified and legally recognized members of the profession. But nothing came of it. President Webster may, however, call attention to the fact that my abortive attempt to have a public discussion of the relationship of the profession of the state and the Board was taken up by the Board and a conference called of representatives of all the Illinois state medical societies. This conference was held at the Great Northern Hotel, April 5, 1907. That conference was the most apt illustration of the expressed belief of both Drs. Webster and Egan that the State Medical Society has nothing to do with molding the policies of the State Board of Health. The conference was surely not composed of "idealists." The State Board had carefully arranged that the majority of the members of that conference would be composed of those who could not keep their schools open if the standards of the "idealists" on medical education, medical licensure or interstate reciprocity should prevail. In other words, it was the most beautiful example of a "me too" packed conference that it has ever been my pleasure to be insulted to enjoy. This was so true that I do not know but two official members of the State Medical Society who attended the second conference which was supposedly called to give force to the ideas advanced at the first. I went to the first conference with high hopes that something would be accomplished for the profession of the state, but its results can best be told in the statement of the ancient prophet, when he said, "The voice is Jacob's voice, but the hands are the hands of Esau." The majority of the representatives in attendance were safely chaperoned during the meetings by the gentlemen higher up. The ostensible purpose was to better medical conditions in Illinois, but the real purpose was a thousand miles from this. The real purpose was to do nothing that would disturb the methods and purposes of the Board then in vogue and the majority, knowing what they were there for, did their

work according to schedule and on time, and I must confess thoroughly and well.

The most important thing that came out of the second meeting was the endorsement of a bill (House Bill 813, introduced March 21, 1907). But it "died a-bornin,'" which is strange, in view of the statement of Dr. Egan at Rockford, above quoted, that "the State Board of Health had been able to pass all bills advocated by them." Dr. Webster has recently referred to the failure of the bill to "become a law because of the lack of support of the medical profession, through the apathy and indifference and inefficiency of the officers of the State Society and THE JOURNAL." I think comment on the above is needless when the true history of this conference, as told above, is here for the first time put on record. The writer of this letter has been in Springfield many times to appear before legislative committees in the interests of measures advocated by the Legislative Committee of our State Society. Some of the measures were agreed to jointly by Drs. Egan and Webster and our legislative committee, but the writer has in several instances been informed by members of the Illinois state legislature, both of the senate and house, that these men on *the surface* were for the things advocated by our legislative committee but in committee and in secret had persistently made the statement that what we already had "was better than what we were after." This was notably true when Dr. Geo. W. Webster appeared before the House Committee in Springfield in 1902 and knocked the bill that had previously been agreed upon by both the State Board and our legislative committee. This bill was for the establishment of a Board of Examiners separate from the State Board of Health. Its sections had been gone over and changed to suit the views of both Dr. Egan and Dr. Webster and they had both agreed to support it. Imagine the surprise and disgust of the Legislative Committee of the Illinois State Medical Society when shown a letter from Dr. Geo. W. Webster "knocking" the bill which had been so drawn as to suit his views and wishes. There was just a little humorous incident in this Egan-Webster or Webster-Egan comedy. It was the assumed anger before our committee of Dr. Egan because of Dr. Webster's double dealing. I was not a member of the Legislative Committee, so I did not witness the "anger," but the story has been told so many times when speaking of the fate of that bill and of the relationship of these gentlemen to it that I am sure that I am safe in repeating it here.

I could say more about the slaughtering of this bill in the house of its supposed friends. There is a sweet little chapter about Governor Yates being seen by Dr. Webster in order to have the bill vetoed should it by any mischance reach the governor.

Of course, Dr. Webster denies this now, but I was told at Springfield at the time that the State Board was "against the bill" and that nothing would be done with it. And the legislative member in question proved to be a true prophet. I mention these things because the profession at large should know them, as these things were known to the Council and our legislative committee at the time.

The State Board of Health should be the rallying point of the whole profession. This has been the understanding of the Council since I

became a member. It has, however, been found impossible after many meetings and attempts in various other ways to really interest the executive officers of the present State Board in the aims and objects of the Illinois State Medical Society for better medical and sanitary practice in the state, as well as reciprocal conditions for the profession as between the states. This failure is not surprising when the expressed opinion of the president of the State Board, above quoted, is considered, that the State Board does not exist for the benefit of the medical profession except possibly, "incidentally," in all of which I am willing to agree. I could write more on this subject. Indeed, I would like to write more, but these letters cost the State Society, when printed in THE JOURNAL, a good deal of money. I would like to write on interstate reciprocity as practiced by the present executive officers of the Board. But that is a story by itself and a story, too, where the mere personal interpretation by Secretary Egan put upon this desired fact in the experience of many in the past and of others who may yet desire it in the future has worked a hardship that is not only unnecessary, but cruel in the extreme to many worthy members of our profession who have left, or who may in the future, want to leave the confines of the State of Illinois. I regret also that I cannot, for want of space, report fully the experiences of the Committee on Medical Education of the State Society when they investigated the "'rotten" medical schools in this state; places (for they are not schools) where illy-qualified men and women are made to believe that they have been educated in modern medicine and let out into this and other states to compete with a profession that is already overcrowded and to prey upon an unsuspecting public.

These poorly equipped graduates, be it remembered, can go anywhere with their license obtained by the mere accident of having been examined, while the physician of a few years ago, having all the legal rights of his younger competitor and no matter how well qualified for the real practice of medicine, is forced to remain in Illinois, unless he can take the time and money necessary to brush up extensively in order to pass the required examination. I have no idea that the profession will long submit to the impositions placed upon it by the present State Board in these and other matters, as soon as they are fully informed as to the conditions which are maintained and fathered by the present Illinois State Board of Health. I believe that I have answered my questions asked above as to whether either Dr. Egan or Dr. Webster can be counted as faithful friends of the medical profession of this state. I want to ask another question of the profession of this state: Why is it that strenuous legislation in favor of giving osteopaths all the rights and privileges of physicians and surgeons comes up at every regular session of the Illinois Legislature and is defeated by only a narrow margin?

Some day this bill is going to pass "if yer don't watch out."

The State Society members are probably not aware that hundreds and even thousands of dollars have been spent by their society in order to try and bring Illinois up to the scientific standard of other states along State Board of Health matters. This money so far has brought us nothing. Neither Dr. Egan nor Dr. Webster in their private medical

organ published at the expense of the state have ever, so far as I can remember, given the State Medical Society any credit for either the money, time or energy expended by its officers in this unselfish work. The most of this money has been wasted because our legislative committees have had to butt their heads against our State Board of Health's dark methods of procedure when they were not in sympathy with what seemed to the Council of the State Society best for both the people and the profession of the state. In closing, permit me to say that what I have tried to tell the profession in this letter I consider of the utmost importance to them, not only now, but for the future also. Whether the Illinois State Board of Health in these matters is culpable or not matters little. It is not a question of the State Board or the State Medical Society primarily, but it is a question whether we are following old and antiquated methods which will be done away with sooner or later by forces which we should not only initiate but control. If we allow the profession to drop into the same relative position that it occupies in many of the European countries or in England, it will be because we have listened too often to the self-seeking political doctor whom we have followed to our hurt. Respectfully submitted,

J. F. Percy.

DR. WEBSTER COMMENTS ON OUR EDITORIAL.

Office of the President, 70 State Street.

Chicago, March 23, 1910.

To the Editor:—Permit me the space in The Journal to reply to an editorial appearing on page 333 of the March, 1910, issue of The Illinois Medical Journal. I would not request this were it not for the fact that you question my personal veracity.

You say, "Again, the Illinois State Board of Health was held up to ridicule and placed in a most unenviable position. This was especially during the delivery of Judge Olson's address. At its conclusion, the President of the State Board of Health endeavored to mitigate the severity of the castigation by a statement that the Board had endeavored to secure a change in the law, but was not sustained by the medical profession." You then go on to say, "If it is true, etc."

Why don't you tell the truth? You know that what I said is true. You know that you and the entire Council of the State Society attended a conference called by the State Board of Health and which convened at Chicago on April 5, 1907, reported on page 492 of The Journal, April, 1907, at which the bill to which I referred (House Bill 813, introduced March 21, 1907) was endorsed.

You know that this bill was never at any time referred to by you or by The Journal of the State Society and that it failed to become a law because of lack of support of the medical profession, through the apathy and indifference and inefficiency of the officers of the State Society and The Journal. You know very well that I did not discuss Judge

Olson's paper for the purpose of "endeavoring to mitigate the severity of the castigation" which you allege that he administered to the State Board of Health, but for the purpose of showing that the Board knew and realized as well as he the weakness of the present law, and had attempted to cure the same by proper legislation, but chiefly for the purpose of emphasizing his statement which you quote, "*The medical associations show no activity in behalf of the honor of the profession," thus placing the "castigation" and the blame where it squarely belongs, on the shoulders of the State Medical Society.*

You know very well that instead of "castigating" the State Board of Health he urged that this as well as other authority and power be given the Board for the purpose of giving the medical profession, as well as the people, that protection to which they are justly entitled.

After reading your editorial, I wrote Judge Olson, directing his attention to it. In a reply dated March 22, 1910, he says: "You were present at the time of the address and must know that I did not hold the State Board of Health up to ridicule. On the contrary, I was careful to point out that the Board was helpless in view of the present status of the law of this state, which prevents the Board from revoking certificates of those who received them prior to July 1, '99, the time of the going into effect of the present medical practice act. What I did say was that to one not familiar with the law on the question it might seem strange that the State Board of Health failed to revoke the licenses of those who had been convicted of penitentiary crimes. *There was nothing in my address which could be construed in any way as a criticism of the State Board of Health.* My one motive was to call the attention of the profession to the great injury to the profession resulting from the holding of medical licenses by the unworthy, and especially ex-convicts."

It is, indeed, unfortunate that you should be guilty of such mendacious terminological inexactitude in misrepresenting and misquoting Judge Olson for the purpose of attempting to place the State Board of Health in a false light before the members of the State Society.

GEORGE W. WEBSTER,
President State Board of Health.

LETTER FROM DR. J. A. EGAN.

STATE BOARD OF HEALTH, STATE OF ILLINOIS.
SPRINGFIELD, March 24, 1910.

To the Editor:—I have read very carefully the communication of Dr. Carl E. Black, appearing on page 344 of the March number of THE ILLINOIS MEDICAL JOURNAL, written in answer to my letter appearing in the same issue. I must confess my considerable surprise that Dr. Black should have so thoroughly ignored the points at issue and should have dwelt so extensively upon matters entirely irrelevant and foreign to this discussion.

There is no more occasion, at this time, to discuss my personal qualifications as a sanitarian, acquired during sixteen years of municipal

and state public health service in Illinois, than there is to dwell upon the sanitary qualifications of the gentleman whose candidacy for the secretaryship of the State Board of Health Dr. Black so enthusiastically—and it now seems so inconsistently—espoused but a few years ago.

This is not the time to quote the opinions of the Secretary of the State Board of Kentucky in regard to the administration of the medical laws of Illinois, the accuracy of which has already been openly questioned, and which the editor of THE ILLINOIS MEDICAL JOURNAL failed to attempt to substantiate, although publicly challenged so to do by the President and Secretary of the State Board of Health.

Nor is it the time to voice the views of a former Secretary of the Wisconsin State Board of Examiners relative to the administration of the Illinois medical practice act; opinions which, peculiarly enough, were never expressed to the Illinois State Board of Health by either the Wisconsin Board or its former Secretary.

It is hardly the time to drag in garbled extracts from alleged letters from the Secretary of the State Board of Registration of Michigan—letters which, if genuine, contain statements which are maliciously false, but which, whether false or true, genuine or spurious, have not the slightest, not the remotest, bearing upon "medical education, medical examination or medical licensure" in Illinois. The extravagant, if not reckless, style of the Michigan letter is obviously due to the Secretary's personal resentment that Illinois did not choose to follow his peculiar ideas regarding reciprocity.

Nor, parenthetically, is this the time to introduce alleged personal communications from the Chairman of the Committee on Medical Education of the Illinois State Medical Society which, if genuine, are apparently at variance with the official and widely-published report of his Committee—a report rendered two months after the date of the alleged personal communication. It will be recalled that the official report made no mention of the State Board of Health, except to express satisfaction over the elevation of the standards of preliminary educational requirements by the Board.

But it is the time to thresh out the original point of contention which gave rise to this discussion. It is the time for Dr. Black to specify the "several sources" through which it was brought to the attention of the Southern Illinois Medical Association that Illinois has become one of the "rotten spots;" and now is the time for Dr. Black to explain when, where and by whom Illinois has been characterized "as one of the plague spots of this country in medical education, medical examination and medical licensure." These original questions, upon which the Illinois State Board of Health based its charge of absolute and unwarranted unfairness, have remained unanswered and ignored. Again I ask why does Dr. Black evade the issue? Again I ask why all this sophistry and subterfuge?

It is also time for Dr. Black to attempt to sustain the remarkable and bewildering figures regarding state board examinations, offered by him in the February number of THE ILLINOIS MEDICAL JOURNAL, and which

I feel I have successfully controverted; which feeling is justified by Dr. Black's studious evasion of further discussion of this matter.

While Dr. Black has departed so far from the subject and object of this controversy that it is impossible to follow him and still adhere to the text, it is only fair and proper, if the whole truth is to be known, that I follow him in one or two of those digressions with which he apparently hoped to obscure the real issue, and to cast further discredit upon the State Board of Health.

I had rather anticipated that Dr. Black would attempt to sustain the charges made by him by a reference to the report of the Council on Medical Education of the American Medical Association, made on Feb. 28, 1910—a report which deals entirely with matters of medical education, and has no bearing whatever upon "medical examination" or "medical licensure;" a report which, furthermore, has no real bearing upon the *practical* and *legal* supervision of medical education in Illinois or elsewhere.

In this report it is shown that only three of the twelve medical colleges of Illinois, and only sixty-eight of the one hundred and thirty-eight medical colleges of the United States, maintain a standard entirely acceptable to the Council on Medical Education, thus visiting censure upon every state medical examining and licensing board in the United States.

And, according to Dr. Black, it is this report which "certainly amply justifies the Southern Illinois Medical Association in their (?) resolution of Nov. 5, 1909!"

The ideal and Utopian in medical education are attractive, and seem readily available to those who are not conversant with the state laws; but it will be found that the very laws which authorize supervision of such matters also exact moderation in their enforcement. The Council on Medical Education of the American Medical Association acts as it sees fit and is responsible to nobody. Its standards may soar to the heights or may drag in the dust, according to the sentiment of the majority of its members.

The same may be said of the Carnegie Foundation for the Advancement of Teaching, another independent organization seemingly striving for the ideal, and to which a reference is made by Dr. Black in his attempt to make a case against the Illinois State Board of Health. And here it may be appropriately noted that, according to the daily papers of this morning, Mr. Abraham Flexner, representing the Carnegie Foundation, declared, yesterday, at the meeting of the Association of American Medical Colleges at Baltimore, *that as many as thirty-five of forty-nine institutions in the Association failed* to come up to the standard! "The standard," which seemingly is as evasive as it is exalted, and for which the Carnegie Foundation is responsible to no one!

As a question which is entirely pertinent may I ask Dr. Black, if he were a member of the Illinois State Board of Health, would he vote that nine out of the twelve medical colleges be declared "not acceptable," on the word of the Council on Medical Education to that effect? Would he take his stand, as a public official, in declaring thirty-five of the forty-

nine colleges in the Association of American Medical Colleges "not up to the standard" because they were so declared by the Carnegie Foundation?

"Many, many years ago," as the story has it, the Illinois State Board of Health, influenced by certain physicians in Illinois, adopted certain standards of the Association of American Medical Colleges—a most excellent organization, by the way, and one with which the Illinois State Board of Health is pleased to work in harmony as the Board is pleased to work in harmony, as far as practicable, with the Council on Medical Education. This action, however, brought forth a vigorous remonstrance from one whom we believe was known as the "Father of the American Medical Association," the late Nathan Smith Davis, who wrote to the Secretary of the Illinois State Board of Health under date of Aug. 23, 1893, in the following unmistakable language:

"The Association of American Medical Colleges is a voluntary organization of such medical colleges as choose to appoint delegates and comply with its constitution and by-laws. It has no legal status or authority to fix a standard for any college not belonging to it. It is absurd for the Illinois State Board of Health, legally charged with the duty of determining what standard of requirements a medical college must have to entitle its diplomas to recognition, to attempt to delegate that duty to voluntary associations or societies, any one of which may change its rules every year. The action of the Illinois State Board of Health was a ridiculous abandonment of the claim to regulate the education and practice of medicine in this state, persistently exercised during all its previous history."

But, waving the question of the propriety of the adoption by the Illinois State Board of Health of standards set by voluntary and independent organizations, which are beholden to no one excepting themselves, it must be borne in mind that state examining and licensing boards are entirely subservient to the laws by which they were created, and under which they operate, and they cannot delegate their power to any other organization. On this point the Supreme Court of Illinois, the dictum of which is final in the interpretation of the state laws, has spoken as follows:

"Their action is be predicated upon the requisite facts and no other tribunal is authorized to investigate them. The act of ascertaining and determining what are the facts, is in its nature judicial, involving investigation, judgment and discretion."

Continuing upon this subject, the same court, the Supreme Court of Illinois, in discussing a suit for mandamus, said:

"Yet if a discretionary power is exercised with manifest injustice, or such discretion is grossly abused, or exercised for selfish and unworthy motives, the courts are not precluded from commanding its due and proper exercise. . . . The discretion vested in official bodies must not be exercised arbitrarily, or for the gratification of feelings of malevolence, or for the attainment of merely personal and selfish aims, but for the public good and should be controlled by an honest judgment and not by prejudice."

Going further, and discussing the power of a state board to decide whether a college by which the applicant has been graduated is reputable or not, the court said:

"They (the state board) must decide that question upon just and fair principles and not upon motives of self-interest or to crush out a rival college to the one in which they are interested as members of its faculty."

Further on the court again emphasized its ruling that no other tribunal is authorized to investigate for a state board, in the following language:

"The only question for them to determine is whether such college is reputable or not; and the law clothes them, and no other body, with the power to decide the question. They cannot delegate their discretionary power."

If it is the contention that the Illinois State Board of Health is at fault in failing to require the standards such as are set by the Council on Medical Education of the American Medical Association or of the Carnegie Foundation, the allegation must be admitted, and a similar fault must be admitted on the part of every state examining and licensing board in the nation. If the State Board of Health is censured for failing to require standards in excess of the provisions of the laws or beyond the reason which the Supreme Court has demanded in the enforcement of the laws, that censure must be accepted without discussion.

Dr. Black offers as an "interesting sidelight" a comparison between the results of the examination of the Illinois State Board of Health and those of the Illinois State Civil Service Commission, which becomes the *reductio ad absurdum,* for it is more than ridiculous to compare examinations for licensure which the law requires to be "wholly impartial" and "of a character sufficiently strict to test the qualifications of the candidate as a practitioner," with competitive civil service examinations, in which none but the very best can win.

But the "sidelight" will not prove of the splendor looked for by Dr. Black, and it casts an illumination which he might have observed had he followed its ray further.

It is true, as stated by Dr. Black, that a large percentage of the licentiates of the Illinois State Board of Health failed to pass the civil service examination, but the figures pertaining to the rejections give little aid and comfort to Dr. Black and others who have so sweepingly condemned the greater number of the medical colleges of Illinois.

Of the ninety-eight licentiates of the Illinois State Board of Health, graduates of medical colleges of Illinois now in existence and recognized by the Illinois State Board of Health, who have appeared for examination before the Illinois Civil Service Commission during its existence, 80 per cent. failed in the examination for physicians; 37 per cent. in the examination for assistant physicians, and 55 per cent. in the examination for interns. Of these ninety-eight, *seventy-nine were from the three medical colleges of Chicago alone pronounced "acceptable" by the Council on Medical Education of the American Medical Association,* in its report, rendered on February 28 last. Of these seventy-nine, 80 per cent. failed

in the examination for physicians; 31 per cent. in the examination for assistant physicians, and 50 per cent. in the examination for internes.

Going out of Illinois, and taking two leading medical colleges of the United States said to be "acceptable" to the Council on Medical Education, we find the following results:

New York University and Bellevue Hospital Medical College, 100 per cent. of failures in the examination for physicians.

Jefferson Medical College, Philadelphia, 100 per cent. of failures in the examination for internes.

The results obtained in the examinations of the Civil Service Commission while irrelevant to this discussion, certainly cast a "sidelight"—one, which we venture to opine, would have been promptly extinguished by Dr. Black had he realized the effect of its beams.

In conclusion, Dr. Black offers a suggestion that the State Board of Health "take off their coats and clear up the condition as they could easily do." If Dr. Black has any reasonable or tangible plan of action in this direction, it will be seriously considered.

And I will ask Dr. Black at this time, and I might say for the last time, to give to the State Board of Health some definite data upon which to act to rectify the alleged unfortunate conditions of "medical education, medical examination and medical licensure;" data upon which the Board can speedily act; such data as Dr. Black failed to furnish when called upon to do so at the conferences between members of the Judicial Council of the Illinois State Medical Society and members of the Illinois State Board of Health in the presence of Governor Deneen on March 2 and May 8, 1908; such data as Dr. Black failed to give in his letters in the February and March issues of the ILLINOIS MEDICAL JOURNAL.

(Signed) JAMES A. EGAN,
Secretary Illinois State Board of Health.

DANVILLE MEETING.

DANVILLE, Ill., April 1, 1910.

Doctor:—Every indication points to a rousing state meeting in Danville.

In reply to letters and printed announcements, we have had many favorable personal letters.

If it is a question of attending either the state or national meeting, decide in favor of Illinois. Your State Society confers special privileges and is active in its efforts on your behalf.

The program, you will find, is filled with papers by men of local and national reputation. Personal contact, so important to medical enthusiasm, is to be found in *your* next state meeting.

MAY 17TH, 18TH AND 19TH.

Make another effort to secure a new member for your local society.

Welcome to Danville. Fraternally,

A. MERRILL MILLER, Chairman Publicity Committee.
STEPHEN C. GLIDDEN, General Chairman.

THE COMMISSION ON OCCUPATIONAL DISEASES.

To the Editor:—The Commission on Occupational Diseases, appointed by Governor Deneen on the ground of the joint resolution of the legislature of Illinois, earnestly requests the aid and cooperation of the medical profession of Illinois.

It is the purpose of the Commission to take up first the trades in which lead and salts are used, in the endeavor to ascertain the extent of lead poisoning in such trades. Physicians whose practice is in industrial neighborhoods, physicians on hospital staffs and interns in hospitals are asked to assist the Commission in discovering such cases.

It is a matter of common knowledge that cases of lead poisoning in which the characteristic extensor paralysis of the hand is absent usually escape detection, being diagnosed as gastroenteritis, chronic constipation, appendicitis, muscular rheumatism, anemia, neurasthenia, hysteria or arteriosclerosis. As these constitute the majority of all cases of lead poisoning, it becomes a matter of great importance to call the attention of the profession to the obscurer manifestations of this industrial poisoning.

If the patient's occupation is that of a painter or printer, lead poisoning will often suggest itself to the examining physician, but there are many other industries in which lead is used, and in which poisoning occurs. The following is a partial list of the trades in which lead poisoning is to be looked for:

White lead works, manufacture of paints and dyes, manufacture of varnishes.

Painting and varnishing buildings, furniture, carriages, agricultural implements, electrical machines, automobiles.

Plumbing, gas fitting, typefounding, typesetting, linotyping, enameled signs, lithography, making of imitat, lead mining, lead smelting, soldering, making of tin and enameled ware, glass making, potteries, electric storage batteries, people employed as janitors and scrub women in above places.

The Commission will be grateful for any information concerning lead poison in these trades. It is very desirable to have stated the particular branch of the industry in which the patient has been employed and the length of time he has worked there. Painters and printers may apparently work many years without developing symptoms, while an exposure of two or three months may be enough to cause lead poisoning in a worker in storage batteries, in a white lead factory, in finishing pottery, or in the removal of old paints and varnishes.

While at first the Commission will concentrate its attention on lead poisoning, it will greatly appreciate the communication of carefully studied and well-authenticated facts relating to deleterious conditions affecting the health of the working people in any industries in this state, and it would suggest that there is no more tempting field of research for the practicing physician than this hitherto neglected subject of industrial diseases. As a guide to such study, the following list of the principal poisons used in industry is appended:

Phosphorus—Match factories.

Mercury—Manufacture of felt hats, manufacture of incandescent electric lights, manufacture of electrical meters, gilding and silvering, manufacture of paints and colors, manufacture of wall papers, manufacture of fancy papers of all kinds, manufacture of playing cards, manufacture of artificial flowers, manufacture of children's toys, dyeing textiles, lithography.

Bichromate of potassium and sodium—Manufacture of dyes, dyeing and printing textiles, photography.

Aniline and the nitro-benzins—Manufacture of explosives, manufacture of anilin dyes.

Benzine and naphtha—Dry cleaning establishments.

Carbon monoxide—Blast furnaces and foundries.

Communications, which, upon request, will be held confidential, may be mailed to the secretary, Prof. C. R. Henderson, University of Chicago.

EDGAR T. DAVIES.
LUDWIG HEKTOEN, M.D.
JAMES SIMPSON.
JAMES A. EGAN, M.D.
DAVID ROSS.
GEO. W. WEBSTER, President,
70 State St., Chicago.
C. R. HENDERSON, Secretary,
University of Chicago.

HOSPITAL AFFILIATIONS OF THE JENNER MEDICAL COLLEGE.

CHICAGO, Feb. 7, 1910.

To the Editor:—Here is some more Jenner College information: They have affiliated with the University Hospital, having been refused a continuation of their affiliation with Grace Hospital on account of non-payment of the monthly fee required, being in arrears for about one year.

The new officers of Grace Hospital, not being in sympathy with their work, put them out. They were out over six weeks.

Yours very truly, M. D. BATES, M.D.
Treasurer Grace Hospital.

P. S.—The students of the College of Physicians and Surgeons are objecting to the above affiliation, as they say it interferes with their hospital facilities.

RECIPROCITY JOURNAL IDEA INDORSED IN COLORADO.

DENVER, Jan. 8, 1910.

To the Editor:—I have submitted your letter to the members of the Publication Committee of *Colorado Medicine,* and, as far as we have been able to consider it at this time, we regard the suggestion of some arrangement by which a member of one state medical society may be enabled to

subscribe for the official journal of another state medical society as a most happy one. We see no objection to it and many advantages, and I believe this committee will gladly enter into such a reciprocal subscription relation. Our subscription price to our own members is $2.00, this being the amount appropriated for the journal from the dues of each member. Our advertising pages, as you know, are strictly ethical and clean on the lines adopted and recommended by the American Medical Association. We shall be glad to know more of your scheme and how others responsible for state medical journals receive the suggestion, and when the matter is ripe our Publication Committee will take official action.

Yours very truly,

W. A. JAYNE, M.D.

Special Article.

ARE THE ELECTIONS IN THE A. M. A. AND ITS CONSTITUENT ASSOCIATIONS FAIR OR LEGAL?

G. FRANK LYDSTON, M.D.

Professor of Genito-Urinary Surgery, Illinois State University, Medical Department

CHICAGO.

As is well known, I have for some time been endeavoring to institute a reform movement in the politics of the A. M. A. and its constituent bodies. In furtherance of this movement I herewith submit to various journals for publication certain facts which, it seems to me, should prove to any reasonable or fair-minded man the logic of my contentions.

1. The voting unit of the A. M. A. is the legally qualified member of the district or county society. If this voting unit is not a voting member of the A. M. A. he is not legally qualified to vote for any officer who functionates as an elector in the A. M. A. Note, please, the following:

a. The voting unit in the district or county society votes for a councilor or councilors or votes for state delegates direct.

b. The council votes for state delegates.

c. The state delegates vote for delegates to the A. M. A.

d. The delegates to the A. M. A. elect its officers and through these officers transact its business.

The voting units are largely non-members of the A. M. A. and not legally qualified to serve as electors in that body.

According to Dr. W. B. Dorsett of St. Louis, Mo., 295 out of 747 members of the St. Louis Society are non-members of the A. M. A. and therefore not qualified to vote for any officer who, or policy which, is directly or indirectly concerned in the official or business management of the A. M. A. *And yet they do vote, the members of the A. M. A. paying a premium for political rights which are given to non-members free of charge so far as the elective franchise of the A. M. A. is concerned.* What

is true of St. Louis is true of Chicago and every other large city. In the Chicago Medical Society there are 503 non-members of the A. M. A.—these are all illegal voting units of the A. M. A. *This throws the balance of power into the hands of the city members of the A. M. A. with a vengeance, and it is a power which can readily be abused.*

According to the A. M. A. directory, there are 73,478 members of state societies in the United States. Of these, only about 35,000 are members of the A. M. A. More than 50 per cent., therefore, of the total votes cast in A. M. A. politics are illegal and absolutely unfair. In Illinois there are 5,246 physicians who are members of the State Society. Only 3,310 of these are members of the A. M. A. Nearly 2,000 men, therefore, vote or are permitted to vote in A. M. A. politics in Illinois alone, who have no legal or moral right to vote. Nearly 50 per cent. of the voters in the New York State Society are non-members of the A. M. A., hence vote illegally. When one considers the enormous financial and professional interests of the A. M. A., these figures are startling.

2. Affiliated Bodies. I doubt if history can show a more ludicrous political farce than the affiliated special societies in the A. M. A. There are ten in Chicago, each represented by a councilor. One may belong to as many as he likes—to all, if the men in control of these organizations see fit to use them for political purposes. As each member is supposed to be a member and voting unit in his local society, he has as many votes in A. M. A. politics and in the constituent bodies—local and state societies—as he has memberships in the affiliated bodies. Thus, in Chicago, if he belongs to ten, he has ten votes for councilor in the affiliated bodies, one for councilor of his branch society and one for councilor at large. *Thus he has twelve votes to the ordinary member's two!* Should he himself chance to be, first, a councilor, second, a state delegate, third, an A. M. A. delegate, he has fifteen votes in all to the ordinary member's two! Should he chance to be an officer of the A. M. A., *this means fifteen votes for himself!*

The local Trustee of the A. M. A. in Chicago has been accredited with membership in five affiliated bodies. As he is a councilor and state delegate, *his total vote—for himself and coterie of supporters—is therefore nine!*

Can the illegal vote of the affiliated bodies be controlled and used for partisan political purposes? Very easily—in fact, it is so used. *Of the eighteen councilors who voted against the A. M. A. reform resolutions recently adopted by the Chicago Medical Society, nine were from the affiliated bodies!*

Comment would be superfluous. I would merely remark that the situation should be quite comforting to those who are inspired by political greed and desire for monopoly, but somewhat disquieting to the country members of the A. M. A., and especially to the members of the various state societies who are not members of affiliated bodies or even of the A. M. A., and who must perforce be content with a single vote—a pitiful

crumb from the political table. Their illegal vote in the state society for A. M. A. representation should not console the latter class for the impositions put upon them in local and state politics. *How do the down-state members of the Illinois State Society like the picture? If they do not like it, let them recall their obtuseness and the manner in which their delegates followed the bell wethers at the state meeting at Quincy last May. Let them also consider whether they wish to continue feasting on political husks at Danville in May next.*

As matters now stand, neither the A. M. A. nor the state societies are autonomous. *To pile Pelion upon Ossa, matters are so arranged that men in the affiliated bodies who are not even members of the Chicago Medical Society vote for councilors from the affiliated bodies!*

Preposterous, but true. The affiliated bodies in Chicago—some of them, at least—demand that an applicant for membership shall be a member of the Chicago Medical Society. *If, however, he drops out of the Chicago Medical Society, his elective franchise is not taken away from him!* An example of this will be furnished on demand.

The spectacle of officers of the A. M. A. serving as, first, councilors, second, state delegates, third, national delegates, is decidedly un-American and *very disquieting to one who has pride of citizenship and believes in equal rights and fair play in our medical societies.*

Remedies: 1. Exclusion of the affiliated bodies from illegal and unjust political privileges, their members having only the same rights in the local societies as other members. 2. Membership ballot in the state societies. 3. Membership ballot in the A. M. A.

The only alternatives for the ballot would be to compel all members of the state societies to join the A. M. A., for which alternative, my brethren, you would not stand for a moment, or to have state membership carry with it automatically membership in the A. M. A.—an excellent plan by the way. The voting should be done by the members in attendance at the meeting. This would put a premium on attendance, and increase both attendance and enthusiasm. Nominations should be made on the first day and voting done on the succeeding days of the meeting. A certain number of nominations by petition would aid in guarding membership rights and democratizing our politics. The place of registration could be made the polling place. The A. M. A., the state societies and the local societies should be made autonomous if we would avoid the rocks and shoals of political unfairness, absurdity and corruption—above all, if we would avoid despotism. The ballot having been obtained, one thing more is necessary to secure autonomy for the constituent societies, viz.: *All officers of the A. M. A. must be prohibited from holding multiple offices and more especially from serving as councilors and state or national delegates.*

Let the rank and file carefully consider the foregoing. Not to-day, nor perhaps to-morrow, but some time in the near future, the members of the local, state and national associations will recall what is here written and wonder why they did not sooner awaken from their lethargy and

spiritless submission to almost incredible political conditions which have robbed them of their rights of citizenship as well as of the society membership rights for which they yearly pay their good money.

In passing, I would call attention to the fact that the A. M. A., being incorporated under the laws of Illinois, cannot legally hold its elections outside of the state. This hazards the stability of the Association, as will be proven if it ever is, for any reason, haled into court. This should be remedied.

I have no axe to grind, my brethren, and once the necessary reforms have been established I shall return to more congenial pursuits than medico-political battles. It matters naught to me personally whether the members of the state societies go on and on forever, blindly following the lead of professional medical politicians, but it matters much to the rank and file whether the local and state organizations continue to be merely kitchens for A. M. A. politics. If the members of the state societies are content to allow the state organizations to continue to be merely adjourned meetings of A. M. A. officials, or at least of the large city societies, I presume that I ought to be reconciled to the situation. And yet, as a matter of justice to the rank and file, I am not.

COUNTY AND DISTRICT SOCIETIES.

ADAMS COUNTY.

The Adams County Medical Society met in regular session in the Elks' club-rooms, February 14, with President D. M. Knapp in the chair. Others present were Drs. Gilliland, Miller, Mercer, W. E. Nickerson, Koch, Shepherd, W. W. and J. G. Williams, Center, Pittman, Spence, Bates, Blickhan, Knox, Mitchell, Werner, Gabriel, Montgomery, Christie, Bierne, Whitlock, Knapheide, Haxel, Hart and Wells. Visitors, Dr. L. E. Schmidt of Chicago and Green and Curless of this city and this county. A communication from the Quincy Civic Improvement League, requesting the appointment of a committee from this society to act with them received favorable action, and the president appointed Drs. J. B. Shawgo, J. K. Reticker, and H. Hart. Dr. Nickerson thanked the society for flowers sent him during his recent attack of pneumonia. Dr. W. E. Mercer of Liberty was elected to membership, after favorable action by the censors. The application of Dr. C. R. Bates of Camp Point, a graduate of the P. and S., Chicago, was presented and referred to the censors. Adjournment to the hotel Newcomb was then had for luncheon. In the afternoon Dr. L. E. Schmidt of Chicago addressed the society on "The Newer Surgery of Vesiculitis, Epididymitis and Prostatitis," and gave a report of a number of cases treated. The speaker showed conclusively the shorter course of epididymitis which followed an incision into the head of the organ. He also advised it as worth while in the prevention of a large per cent. of the sterility following that trouble under the usual treatment. Vasostomy was declared the most effective treatment for vesiculitis, and through the opening in the vas the injection of a suitable solution of argyrol. Dr. Schmidt showed himself to be one of the leaders in his line and the Adams County Branch felt itself under an obligation for his able address as was evidenced by the vote of thanks which was passed and the election of Dr. Schmidt to honorary membership in the society.

Adjourned. CLARENCE A. WELLS, Secretary.

Regular Meeting, March 14, 1910.

The March meeting of the Adams County Branch was held in the Chamber of Commerce rooms on March 14, with President Knapp in the chair. This meeting was the anniversary of the organization of the society sixty years ago in this city. A communication from Dr. H. N. Moyer, chairman of the medicolegal committee of the state society was read. A resolution commending the work of the Quincy Civic Improvement League, was unanimously passed. Dr. C. R. Bates of Camp Point, after the report of the censors was read, was unanimously elected to membership in the society. Adjournment to the Hotel Newcomb for luncheon was then had, after which the general topic for discussion, "Acute Infections of the Respiratory Tract," was taken up. Dr. H. P. Bierne, Quincy, gave a discussion of some phases of the diphtheria question, especially as regards the moral and scientific obligation of doctors to make a definite diagnosis of the disease by using the assistance of the State Biological Laboratory. Discussed quite generally by the physicians present. Dr. J. W. Earel presented a paper on "Acute Infections of Accessory Sinuses," which brought out some valuable points and means of diagnosis. This was also discussed by several. Dr. Kirk Shawgo, Quincy, read a paper on "Influenza" which brought to the attention of the society the importance of the infections and their sequelæ resulting from the Pfeiffer bacillus. The prevalence, chronicity, and importance of the disease was commented upon. The paper received a general discussion.

Adjourned. CLARENCE A. WELLS, Secretary.

CARROLL COUNTY.

The Carroll County Medical Society held its mid-winter meeting at Mt. Carmel in the Carnegie Library, Feb. 8, 1910. The dangerous condition of the roads kept a number from coming and the attendance was not up to the average. It was, however, a profitable meeting. Dr. A. Rinedollar read a paper on "Maternal Impressions, Heredity and Double Sex," which contained much interesting and curious material. Dr. Horace M. Starkey of Rockford read a thoughtful and timely paper on "Clinical Experiences with Wright's Vaccines." Following is a brief abstract of the essay:

1. A brief review of the studies in immunity leading up to Wright's discoveries of opsonins and the opsonic index.

2. Vaccines—suspensions of dead micro-organisms in sterile liquid, when introduced into the system, can increase the power of the blood to destroy living organisms of the same kind. These vaccines should be given in small and infrequently repeated doses.

3. The time and complicated technic required to find the opsonic index and to prepare autogenous vaccines place them beyond the reach of the general practitioner except in special cases, but in many instances stock vaccines may be used to advantage.

4. In the considerable number of patients to whom stock vaccines have been administered by the author and his confrères no untoward effects have been noticed in my cases. In about twenty per cent. no effect was seen and in about eighty per cent. the effect appeared to be decidedly beneficial.

5. Cases are summarized where vaccines were given for combating infection and others where they were employed before operations or after injury to favor immunity.

The secretary had some time before sent out a large number of letters to leading physicians of the country asking for their experience with bacterial vaccines. A number of replies were read, and from them it appeared that everywhere there is great interest in the subject and that many are using stock as well as autogenous vaccines.

Adjourned.

H. S. Metcalf, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, Jan. 12, 1910.

A regular meeting was held Jan. 12, 1910, with V. F. Masilko, president of the Douglas Park Branch, in the chair. Alexander C. Wiener read a paper entitled "Syphilitic Tumors of the Intestines," with report of a case and exhibited the patient. A. W. Crane of Kalamazoo, Mich. (by invitation), read a paper entitled "A Simplified Method of Estimating the Opsonic Index." This paper was discussed by Wm. J. Butler. Arthur R. Elliott followed with a paper entitled "Treatment of Arterial Hypertension." The discussion was opened by Robert H. Babcock and continued by Joseph L. Miller, B. M. Linnell, A. W. Crane, and the discussion closed by Dr. Elliott. Adjourned.

DISCUSSION ON THE PAPER OF DR. CRANE.

Dr. Wm. J. Butler:—I did not have the pleasure of hearing the first part of Dr. Crane's paper. I did, however, hear the latter part of it, and I must say that great credit is due him for the industry he has shown and for having simplified the method for estimating the opsonic index. He must have put in a large amount of work in working out this method. The method seems to be quite simple, and has many points in its favor on account of its simplicity, and apparently the great reduction in time necessary to perform it. I can readily see how a standardized emulsion of bacteria will serve a good purpose in estimating the opsonic index. After it is once obtained, I presume the method may be carried on without much trouble, and relied on.

Dr. Robert H. Babcock:—There is little, if anything, I can add to this thoughtful and suggestive paper, and yet I should like to express a few ideas with which my experience has impressed me. In the first place, I agree with those authors who believe it is an error to regard arterial hypertension in every instance as *per se* an indication for its reduction by means of drugs. There are individuals who appear to endure a blood-pressure of 160, 170 or even 180 mm. without discomfort. There are dangers confronting such persons and they should be warned of them, but instead of receiving a prescription for some vasodilator they should be informed of the necessity of moderation in diet and all other things, lest their blood-pressure be increased to a point that will dangerously overtax heart or blood-vessels and should be kept under regular observation that the earliest signs of disaster may be detected and the mishap averted. And right here let me say that when the symptoms of arterial hypertension point to a possible rupture of a cerebral vessel, there seems to me to be no measure which is so beneficial as blood-letting. The effect in reducing pressure may be temporary but the relief and comfort thus afforded are a justification of the measure. The number of ounces of blood to be taken must vary in different cases but the venesection should be ample to achieve the purpose intended, at least 16 to 20 ounces, and I have known a quart to be well borne. It goes without saying that this measure should not be resorted to frequently and then only when less heroic treatment has failed or danger of apoplexy is imminent.

In the second place I desire to point out that in some cases appropriate treatment may relieve ominous symptoms without a lowering, indeed with a slight elevation of the sphygmomanometric readings. As a rule, the persons whom I see with excessive blood-pressure are those whose hearts have begun to give way before the long continued and excessive strain to which they have been subjected. When in them the left ventricle is failing and especially when the mitral valve has begun to leak the sphygmomanometer may not give so high a systolic blood-pressure as was expected. In such cases the gain in heart power may be attended by a retention or even an increase of the blood-pressure figures rather than a diminution, and to attempt to lower these by vigorous onslaughts with vasodilators would in my judgment be a mistake. Such drugs are useful in conjunction with digitalis or other cardiac tonics but should not be used alone as it seems to me in the sole attempt to overcome the underlying arterial hypertension.

Lastly, a few words as to diet and exercise. I agree emphatically with the essayist when he emphasizes the importance of quantitative rather than qualitative restriction in the food, and yet I always cut out one article of the dietary; namely, broths and strong meat soups, since the extractives they contain tend to increase arterial hypertension. Another very important factor is the correction of intestinal indigestion as shown by flatulence. To this end the food should be simple, not fried and not too high relatively in the carbohydrates. Buttermilk and tablets containing the lactic acid bacillus are often most useful and in my hands have furnished highly gratifying results. The "morning purge" so lauded by the Doctor meets with my cordial approbation and constitutes one of our chief weapons in this class of cases.

Exercise is another indispensable measure of treatment, not only as a means of maintaining a proper interchange of gases in the tissues but also of aiding the heart in its efforts at maintaining the circulation. Accordingly, as I have pointed out elsewhere, it has been my custom for several years to have my patients showing arterial hypertension and particularly those whose daily habits are sedentary take a course of medical gymnastics under the supervision of a competent instructor. These in the main consist of deep diaphragmatic breathing, together with such other movements as assist the heart in carrying on the circulation. Their beneficial effect is truly surprising and even when they do not accomplish a lowering of blood-pressure they aid greatly in the removal of symptoms particularly such as indicate incipient myocardial incompetence.

In conclusion let me say—whoever has much to do with this class of cases must come to the conclusion that the safety of individuals lies not in treatment

after blood-pressure has become persistently high but in the prevention of arterial hypertension, so far as that is possible, and in the protection of the heart, blood-vessels, brain and kidneys from the evil consequences incident to the inevitable increase in blood-pressure which seems inseparable from the underlying cause, whatever that may be.

Dr. Joseph L. Miller:—It is the quantitative rather than the qualitative diet which is of importance in these cases. Not every case of hypertension requires treatment. Personally, I am an advocate of arterial hypertension as a protective measure in most cases. It is the only safe way of dealing with these cases, assuming that the hypertension is due to imperfect elimination or is due to increased elimination, rather than make attempts to lower blood-pressure by means of vasodilators to increase elimination through the skin and bowels.

During the past few months we have taken a series of ten cases and have determined by careful observation the effects of single doses of the various vasodilators, that is, nitroglycerin in 1-100th grain doses; sodium nitrite in two-grain doses, and erythrol tetranitrate in one-half grain doses, and in this series of ten cases there were 30 per cent. of them which were not affected by any one of these vasodilators. Furthermore, the same dosage of these drugs in some patients would produce an enormous fall in blood-pressure, while in others no appreciable effect was observed. Erythrol tetranitrate when given to one patient produced a fall in blood-pressure of 100 mm. of mercury; whereas the same patient after receiving sodium nitrite showed only a slight effect on his blood pressure. In cases of dilatation we found that blood pressure could be lowered by the use of nitroglycerin, but only slightly by sodium nitrite or erythrol tetranitrate.

Another point observed was this: the blood-pressure of these patients showed a remarkable variation without any form of treatment. For instance, one patient was in the hospital two weeks, during which time his blood pressure, taken several times, ranged in the neighborhood of 200 mm. of mercury. There was a moderate fall in blood-pressure in this case following a single dose of erythrol tetranitrate, and under several doses of erythrol tetranitrate it finally fell to 100 mm. of mercury, and remained at this point during his stay in the hospital. This very marked fall in blood pressure was in no way due to the single dose of medicine which the patient received. It was interesting to note, just as Dr. Elliott has pointed out in these cases of high blood-pressure, that this patient was passing 600 c.c. of urine, while with lower blood pressure he was passing 1700 c.c. of urine. High blood-pressure is not necessarily associated with increased output of urine. A patient with a blood pressure of 110, with rest in bed, may have a drop down to 100, and without any apparent cause in one case it went to 210 again. These very marked fluctuations in blood pressure were quite a surprise to me because in my private work the patients who have had high blood-pressure once have always had them for several years. But there are certain patients, as we found in this series of ten cases, who may show marked fluctuations in blood pressure without any apparent cause.

Just one word in regard to the effect of sweating. While a single sweat may not do very much good, I am strongly of the belief that continued sweating daily will have a decided, although possibly temporary, effect upon blood pressure. I will report one case. A patient under observation for several years had a blood-pressure that was rarely ever below 200. In the hospital he was given a sweat daily. At first, there was simply a transitory drop in blood pressure after each sweat, but after the patient had received six or seven sweats, the blood-pressure being taken before and after these sweats, it was found that after taking the sweats his blood-pressure was much lower than it was at the time he entered the hospital, until, at the time he left, his blood-pressure before the sweat was not over 170. After the sweat it was down to 150. Within a few days after the sweats were discontinued the patient's temperature again crept up to the previous level.

There is one thing I should like to warn against, and it is this: in this hospital, where the patient took the sweats, there was a hydrotherapeutic depart-

ment. The persons in charge gave the patient a hot sweat in an electric light bath, and turned on cold sprays. Following this the patient had intense headache, and following it, in order to see what happened, I had her go through the same procedure, and found that the blood pressure, after giving the patient that sweat, was under 200, and after she turned on the cold spray it went up to 260, due to the contraction of the peripheral vessels, showing the danger of applying cold to these patients after a hot bath.

Dr. B. M. Linnell:—The subject of arterial hypertension has received considerable attention in life insurance work during the last two or three years because it marks a point in physical diagnosis which is certainly of some value.

Since 1907 the company with which I have been connected, and I have had opportunities to make observations on applicants during that time, has required the taking of the blood-pressure of patients over forty years of age, and we have found in a number of cases that these blood pressures ran from 160 to 190, although there was nothing wrong apparently with the patients in any way. At any rate, however, we were unable to demonstrate anything in the heart, the blood vessels, the kidneys, or in fact any other organ. And there were other cases in which we found traces of albumin, where the blood-pressure ran as high as 180, but rarely did we find evidence of arterial sclerosis in cases of high blood-pressure. It was usually some trouble connected with the kidneys. Recently a case examined had a high blood pressure, and the man said that on the day we took his blood-pressure he was feeling rather stuffy. He had headache, and so on, and that when he felt that way he often had bleeding from the nose. This relieved him markedly, and we asked him to come back in a day or two and have his blood pressure taken again. He said that the day after he left us he had nose bleed and felt better, and the blood pressure was somewhat lower.

This work has not been done fully and systematically, and there are not enough cases to tell what prophylactic value it has; but there are a number of instances in which we find high blood-pressure, and later on interstitial nephritis has been demonstrated. In one case we found high blood-pressure, but nothing else wrong. The family physician found nothing wrong, but in three months from that time the patient, complaining of headaches, had his urine examined and interstitial nephritis was demonstrated.

Dr. A. W. Crane of Kalamazoo, Mich.:—In the general practice of medicine one is sometimes forced to relieve patients, and temporary relief is the one thing that the physician is called to achieve. The prevention of high blood-pressure then is of secondary consideration. One symptom present is dyspnea. The patient is having hard work to breathe. It may be cardiac, it may be renal, it may be due to arterial sclerosis, but the physician is called upon to relieve the patient of that symptom. I think many physicians do not hesitate to administer a hypodermic of morphin, so great often is the urgency of the case, but personally I have been impressed with the effects that can be obtained by the use of nitroglycerin in doses very much larger than those usually administered. For instance, a patient who has difficult breathing is not relieved by nitroglycerin in 1-100th grain doses. I have dropped nitroglycerin on the tongue of a patient until I have dropped eight, nine, ten, fourteen, or even sixteen drops of a 1-100th of a grain, with relief of the dyspnea, and a drop in the blood-pressure, as tested by the Gärtner instrument. This instrument was used some years ago before the plan of using a strap around the arm came into vogue. Nitroglycerin does something besides lowering blood-pressure because in patients suffering from bronchial asthma, where the blood-pressure was 60 mm. of mercury, the use of nitroglycerin has afforded great relief in breathing, and with no material drop in the blood-pressure which could be demonstrated by a blood-pressure apparatus.

Dr. Elliott (closing the discussion):—This is a subject on which it is extremely difficult to dogmatize, and I presented the views embodied in the paper to-night tentatively because I find, as I go along, my attitude toward high blood-pressure is constantly changing in some essentials. I have been influenced perhaps by the English school of clinicians in carefully and attentively studying the effects

of nitrites given in a routine way in cases which cannot be relieved of their distress by elimination, hygiene, and dietetic measures.

The net results of my experience in this direction are rather favorable than otherwise. There is a certain proportion of cases which even under the influence of vasodilators, the nitrites either alone, such as nitrite of sodium, erythrol tetranitrate, in smaller doses, or in combination with the nitrite of sodium and nitrite of potassium, given in a routine manner; have enjoyed a comfort which cannot be secured in any other way. It is impossible to demonstrate the therapeutics of a drug in many cases by the blood-pressure. Blood-pressure will apparently be lightly or transiently influenced by the administration of nitrites, and these patients can be relieved of their discomforts.

Dr. Babcock's advocacy of venesection in cases where there are severe hypertension crises is an admirable one, and I do not believe there is any measure that is so life-saving when apoplexy prodromes are present or heart failure is imminent as the good prompt withdrawal of blood. A well maintained coronary pressure seems to be essential for these cases, but by tampering with it by the use of nitrites, as I think, we promote rather than relieve the distress. The net results of vasodilator therapy, so far as my experience goes, are that the nitrites are without avail in Bright's disease and in chronic nephritis, and, as a general rule, it is unwise to employ them in cases of hypertension, for where we cannot make out any positive organic factor, and in cases of big bellied plethoric individuals, where the blood-pressure ranges high and there is no nephritis; in these two types I believe the nitrites in conjunction with all other measures recommended—diet, elimination, baths, etc.—will add to our therapeutic success in the conduct of these cases.

Regular Meeting, Jan. 19, 1910.

A regular meeting of the Chicago Medical Society was held on Wednesday evening, Jan. 19, 1910, at 8:15 p. m., in the Northwestern University Building, Chicago, Ill. C. F. Clayton, president of the Calumet Branch, occupied the chair. The following papers, constituting a symposium on Diabetes, were presented: "Ear, Nose and Throat Symptoms," by O. J. Stein; "Eye Symptoms," by Henry Gradle; "Nervous Symptoms," by L. Harrison Mettler; "Dermatological Symptoms," by Wm. L. Baum.

DISCUSSION OF SYMPOSIUM ON DIABETES.

Harry Kahn:—There can be no doubt as to the value of a discussion of the symptoms which complicate such an important disease as diabetes. Dr. Stein's presentation of the ear, nose and throat manifestations was so clear and concise that there is scarcely anything to add. A few points, however, should be emphasized. I wish to enter a protest against the classification of the symptom pharyngitis sicca as a separate entity, as is done by some authors. We find this symptom in mouth breathers, in persons suffering with chronic purulent infection of one or more of the nasal accessory sinuses, and in diabetics. I have always made it a rule to examine the urine when a patient with dry throat presented himself.

As to diabetic otitis media, most otologists have come to the conclusion that it is not a separate disease, but that the otitis media purulenta that occurs in diabetes is the same as that which occurs in the non-diabetic, except that it is more destructive and more prone to go to an acute mastoiditis. Grossmann states that 72 per cent. of all diabetic persons suffering with otitis media have a mastoid involvement. I differ with Dr. Stein regarding the pain in this class of cases. My experience shows that the pain is not diminished, but may be as severe as in those not having this general malady.

I wish to call attention to another condition sometimes found in the diabetic patient, namely, what is known as painful mastoid. These mastoids have frequently been operated on, on the theory, probably, that the individual had primary mastoiditis.

There is one other point. There may occur in diabetes a degeneration of the otic nerve, giving internal ear disease. Wittmark has shown in post-mortem that a diabetic individual who had suffered with internal ear disease had a pure neu-

ritis of the nerve. This may account for the diminished hearing sometimes noticed in these individuals.

Dr. William E. Gamble:—I am especially interested, Mr. Chairman, in the concise résumé of Dr. Gradle; and would not presume to add anything to what he has said other than possibly to emphasize a few points. My experience with medical students, interns and some doctors has convinced me that many of them have a false notion as to the frequency of diabetic retinitis. Diabetic retinitis is a very rare complication. I have seen two or three cases in twenty years. I have had under observation for the last five years a patient who has given me a fine opportunity to study and compare the difference between this disease and albuminuric retinitis which it most nearly resembles. The typical form of diabetic retinitis is characterized by the deposit of exudate in the retina. In my case this deposit was of a brilliant white diamond-like appearance, no doubt due to cholesterin crystals. This appearance of the exudate lasted for two years and later the brilliant white color disappeared, a muddy exudate remaining, and this finally cleared up entirely.

One of the most prominent recent English text-books says that the exudate is always muddy looking. As Oscar Dodds of this city has pointed out, the appearance of the exudate varies from the brilliant white of the early stages to the muddy white of the later. There is little if any tendency for these plaques of exudate to coalesce as we find is true in albuminuric retinitis. Another striking difference is that the optic nerve is not as a rule involved in diabetic retinitis and the blood vessels of the retina are not disturbed in size nor much tortuosity seen, while in albuminuric retinitis the optic nerve head is oftentimes involved and the vessels, especially the veins, are engorged.

This patient, having had the disease for five years and being still good for some time yet, emphasizes the difference in prognosis as to duration of life between diabetes with this complication and albuminuric retinitis as in the latter death comes usually within a year. Regarding the question of the danger of operating on the eyes of diabetic patients, I would say that I have just recently extracted the lens in a diabetic patient aged eighty years in which I took the precaution of having the urine free from sugar before operating, and I am sorry to say that the operation was followed by suppuration and loss of the eye. This is the only case of suppuration following cataract extraction that I have had, and I personally do not feel since that experience that there is more risk in doing this operation in diabetic than in non-diabetic patients, as is claimed in many quarters. It depends on the patient. A diabetic patient may enjoy pretty good health, or the tissues may be of such a nature that they cannot resist a mild type of infection.

I am not sure that Dr. Gradle mentioned diabetic glaucoma, a condition which may complicate diabetic retinitis.

In closing the discussion Dr. H. Gradle said: I fully agree with Dr. Gamble, that retinitis in diabetes is not a frequent occurrence. I remember having seen between eight and ten cases in over twenty-five years' experience. It is very typical, and the disease can be recognized by ophthalmoscopic examination. I wish to emphasize one point, viz., that it is not so uncommon to find some eye lesion like retinitis or amblyopia in a patient whose diabetes had not been discovered before on account of the slight disturbance it had produced.

Regular Meeting, Jan. 26, 1910.

A regular meeting of the Chicago Medical Society was held on Wednesday evening, Jan. 26, 1910, at 8:15 p. m., in the Northwestern University Building, Chicago, Ill. Ludwig Hektoen occupied the chair. Henry B. Favill addressed the society on the subject, "The Responsibility of the Medical Profession." Alice Hamilton then presented a paper on "Chronic Fatigue." The paper entitled "Plumbism, its Diagnosis and Treatment," was then read by Bernard Fantus. This was followed by a paper on "Caisson Disease," by Peter Bassoe. Rachelle S. Yarros then presented a paper entitled "Women in Industry." Professor Ernst Freund then addressed the society on "The Ten-Hour Law."

Regular Meeting, Feb. 2, 1910.

A regular meeting was held Feb. 2, 1910, with the president, John A. Robison, in the chair. H. G. Mundt exhibited a patient with hairy tongue. George Edward Fell of Buffalo, N. Y., read a paper, by invitation, entitled "Artificial Respiration, Forced Respiration with Comments on the Negato-Positive Cabinet Methods of Sauerbruch, Meyer and others. Also a New Method in Thoracic Surgery" (with demonstration). This paper was discussed by A. J. Ochsner, H. M. Richter, Jos. A. Capps, Edwin Pynchon, S. A. Matthews, and in closing by Dr. Fell. On motion of A. J. Ochsner, a vote of thanks was extended to Dr. Fell for his very instructive paper and interesting demonstration. Owing to the lateness of the hour the paper of James F. Churchill on "Rectal Ether Anesthesia" was postponed until the next meeting.

ARTIFICIAL RESPIRATION; FORCED RESPIRATION.

COMMENTS ON THE NEGATO-POSITIVE CABINET METHODS OF SAUERBRUCH, MEYER AND OTHERS; ALSO A NEW METHOD IN THORACIC SURGERY.

GEORGE EDWARD FELL, M.D., F.R.M.S., BUFFALO, N. Y.

(Abstract.)

Artificial respiration prior to the year 1887, consisted of the postural methods of Hall, Sylvester and others. These supplanted the impractical methods by use of the bellows. Marshall Hall considered them dangerous, and from 1857 to 1887, the medical world agreed with him. July 23, 1887, a human life was saved by this method, after the postural method had signally failed. This operation, quickly followed by others, inaugurated a new epoch in artificial respiration. The third epoch, the negative pressure method of Professor Sauerbruch, is already here.

The knowledge which the forced respiration gave us that we could respire for hours and days on human beings with a perfection no more than equaled by physiologic respiration gave us the prospective application to surgery of the thorax.

First Division: This consists of the postural methods and movements of the limbs of the body with intermittent pressure applied at different parts, or those originated by Hall, Sylvester, Schaefer and others.

Second Division: Forcible measures of instrumental control, the forced respiration, now termed the positive pressure method, first practically and systematically utilized by the author in saving human life.

Third Division: The diminished atmospheric pressure system with the cabinet or small moderately tight room, the so called "negative pressure system" of Professor Sauerbruch.

A short description of the various methods of the first division, with special detail of the Schaefer method is given and also a description of the second division.

After describing the method of the third division, inaugurated by Sauerbruch, the author states it may be assumed that the negative pressure method could be carried out in a moderately sized approximately air-tight room built within a hospital, provided with apparatus of sufficient exhaust volume to insure an interchange of incoming filtered air to provide a pure supply for the use of the operators and the patient, and yet control properly the negative pressure.

At this date we must bring in the fact that not only have we negative cabinet, but also positive cabinet methods, which are multiplying so rapidly that it will not be long before the exact value of all of the different methods will be practically known.

The association of the positive pressure of Professor Willy Meyer within the negative cabinet is quite fully discussed, and an account of results obtained by the author with the use of the face or air cup, some eighteen years past is detailed. The author concludes that the positive cabinet is of unquestioned value, and that

for forcible respiratory work is in its essential details or principle similar to the face or air cup of twenty years ago.

A discussion of the claims of different methods. A comparison of efficacy between the first and second divisions, and also between the positive and negative methods is given somewhat in detail.

The apparatus used by the author is fully discussed and the evolution from the old laboratory bellows to the constant electric blower positive method now used by him is shown. Its adaptability to surgery of the chest through the complete and instantaneous control of the respiratory movements of the lungs is completely demonstrated.

The great value of the air valve with its slight exhaust in expiration, and through this its value in utilizing an anesthetic in connection with the operation is described.

Forced Negative Respiration.—As stated previously, the Sauerbruch negative cabinet method, from its design, is intended to and produces auto-respiration. Modifications of the auto-respiratory range of the lungs may be produced by increasing or decreasing the negative pressure. When, for instance, it is desired to close the pleural cavity, the negative pressure is increased sufficiently to produce such an expansion of the lungs as may be needed before final closure of the wound takes place.

We are depending principally on the auto-respirations in all this work. In a condition of the patient bordering on *extremis*, auto-respiration may be greatly impaired, or entirely inhibited. In paralysis, for instance, of the respiratory centers, auto-respiration cannot ensue, and in such a case a negative cabinet would be useless, unless that within the rhythm of normal respiration, the pressure could be changed from the highest negative pressure needed, say 8 to 10 mm. Hg for inspiration to atmospheric pressure producing expiration, and kept up rhythmically. This does not seem to be practical in a large cabinet so that it is not necessary to enlarge upon it. However, from this line of reasoning, and with this little improvised negative cabinet we have added another to the useful, practical and to be hoped valuable features of this specially interesting era of respiratory progress.

The Demonstration.—With this experimental cabinet and artificial lungs, representing the thorax with an open wound and collapsed lung, the electric blower is started. The air intake of the blower is attached by a rubber tube to the outlet of the negative cabinet or simulated injured pleural cavity, and at once the lungs previously collapsed are inflated. By disconnecting the rubber tube producing atmospheric pressure, the lung immediately collapses.

The air valve is at once applied but in a reversed position to its use for positive respiration, so that the air passes from the negative cabinet, or opening in the thoracic wall, which, for instance, we may wish now to term it, to the intake of the blower through the valve.

The moment the piston of the valve is pressed down, the collapsed lung filled up; releasing the piston produces the expiration, and with the one-two-three time rhythm, there is being produced a regular, uniform, *forced negative respiration*, as perfect in all its features as forced or positive respiration could possibly be.

By the opening in the spout of the glass funnel of the cabinet we illustrate the thoracic traumatism, the glass of the funnel represents the pleural cavity, and the collapsed lung lies at the bottom of the cavity. In an actual case we would simply use our air cup, preferably of glass, transparent, to make the air-tight connection with the thoracic walls, and proceed with our forced negative respiration.

The application of this means of respiration is readily noted as an emergency appliance, frequently to be called for in punctured wounds of the chest wall, with collapsed lungs and a pneumo-thorax, and as a "tide-over" until the positive pressure method or negative cabinet could be brought into us. A bellows with valves changing the action from a positive to a negative effect, a vacuum tank with constant pressure gauge or a storage battery blower with the two forces to be used

at will, and the needed air valve and air cups, would constitute an ambulance emergency outfit.

What makes it more problematically useful is that the simple reversing of the positive pressure apparatus that is shown you to-night provides the forced negative pressure appliance.

DISCUSSION ON THE PAPER OF DR. FELL.

Dr. A. J. Ochsner:—The demonstration which you have just seen is so clear that it must impress everyone with the fact that Dr. Fell has given us a method which can be applied by any one who will take the time to follow the directions which he has given. The explanation of the mechanism is so extremely simple that it seems strange that for all the years that this subject has been under consideration it should not have occurred to the many experimenters in physiology that the application to the patient depends only upon a reasonable consideration of the conditions that are present. According to Hall and the surgeons of his day and according to everyone, until Dr. Fell proved the contrary, it seemed that blowing air into the delicate tissues of the lung must necessarily result in traumatism of this organ and you can see readily by the manner in which these artificial lungs expand that where this current of air is not under absolute control, injury to the lung might occur.

Dr. Fell has introduced a valve with a stop-cock which prevents this injury, but it takes a considerable amount of concentration to manage the stop-cock under these circumstances. It takes a lot of practice and it takes a lot of coolness to do this, because we have but very few opportunities outside of the laboratory to practice it. If one has a large practice he may see a dozen of these cases in a lifetime in which life may be lost because of the patient's inability to breathe. Ignorance in this respect on my part has caused the life of several patients. The longest time I have been able to maintain life in a case in which there was a respiratory paralysis was about fourteen hours. It was a case in which a tumor pressed upon the respiratory center, and we kept the patient alive while we were considering the propriety of trephining and searching for this tumor. By the time, however, the patient had been kept alive for this period of time so much traumatism was inflicted by the artificial respiration by the postural method that if respiratory function had been restored it is doubtful whether the patient would have survived the effects of the traumatism. Here we have a method, as Dr. Fell says, that can be carried on indefinitely. He describes a case in which a person had the act of breathing performed for him for a period of twenty-eight hours. Without such an apparatus this is not imaginable. Ever since I became familiar with this method it impressed me so thoroughly that I have used it in a few cases in which I have had an opportunity to do so since. I believe that every one who uses this method must be impressed with the fact that he has been given something that some time will save some one's life in a case in which life would be absolutely lost without this means, because the more complicated methods, the methods of Sauerbruch, Robinson of Boston, and Meyer depend upon a mechanism which requires some technically trained person to manage, while with the Fell apparatus you have something that any one who comprehends simple mechanical principles can use. If he knows how to do as he is told he can manage this apparatus with precisely the same degree of success. I have for years been exceedingly grateful to Dr. Fell for having introduced this method. I think we are all his debtors.

Dr. H. M. Richter:—I was very much interested in Dr. Fell's apparatus, although I did not come here prepared to discuss his paper. The entire subject has been so thoroughly covered that there are not any points in particular that I can add. There are one or two things, however, of which I wish to speak, which were mentioned by Dr. Fell, but which, it seems to me, have not been sufficiently emphasized by the men who are using positive pressure apparatus. The first is the matter of difference between the positive pressure apparatus and the type of apparatus that has been spoken of as the negative pressure apparatus. It seems to me no such difference really exists in the principle of the action of the two types. As a matter of fact, it is the differential pressure that has to do with respiration. It is not a matter

of lowering air tension on the outside of the lung. It is the air pressure in the trachea that is transmitted, of course, to all parts of the lung, the bronchi, air vesicles, etc. It is that air pressure that causes respiration regardless of the type of apparatus used. The difference in atmospheric pressure in using this apparatus and the Sauerbruch apparatus is but a few mm. of mercury. It is not worth considering. In the device I worked out and published a year ago I passed the air into an ordinary rubber bag, such as is used for nitrous oxid anesthesia, using a rubber bag rather than other bags so as to keep the air under constant tension. I found that the amount of tension necessary to keep the lungs in a state of distension was around six or seven mm. of mercury. That is to say, eight mm. of mercury would over-distend the lungs in most animals. In that apparatus the valves were not worked by the fingers, but by a little automatic device that cost ten or fifteen dollars for the model and that would work indefinitely, so that artificial respiration could be kept up for an indefinite period of time automatically. There is one point Dr. Fell brought out that ought to be emphasized and reemphasized, and that is in this type of apparatus he has shown we really have a method of artificially keeping up respiration and not merely keeping the lungs distended.

Dr. Joseph A. Capps:—I wish to express my appreciation of the work Dr. Fell has done in the study of artificial respiration and for bringing this subject before us to-night and in giving this demonstration. His method has been very successful in laboratory work in the resuscitation of animals and it will doubtless prove equally successful in human beings. The simpler the apparatus that can be made for this purpose, the more widely will it be used. It should be simple and cheap. I would like to commend Dr. Fell's original device of the bellows and the ordinary laryngeal tube, for the reason that in laboratory work it has been very successful. It can be used advantageously both in hospitals and in the offices of physicians. I believe it would be a good apparatus for throat specialists who are doing minor operations with cocain, ether, ethyl chlorid and other anesthetics. We know that sudden deaths occur in these operations not infrequently and I believe such patients could be saved by having this simple apparatus at hand.

In the discussions which we have had in recent years on the relative merits of negative and positive pressure a good many statements have been made by the adherents of the negative pressure method which are not at all justifiable. Thus great emphasis has been laid on the danger of forcing air into the lung under too high pressure. This was touched upon by Dr. Richter. It has also been stated that there is danger of rupture of the lung or danger of emphysema, or danger by high pressure of blocking the circulation and killing the patient, and finally the danger of infection. I would like to add a word to what Dr. Richter has said about the danger of high pressure. Sauerbruch states that a pressure of over ten mm. Hg is dangerous. Brauer in reply considered it was not dangerous to have a pressure running up to thirty mm. of mercury. In certain physiologic conditions, such as hiccoughing, singing and blowing, pressure in the trachea or in the lungs goes up to 40, 60 or even 80 mm. of mercury, so that we can see that this danger has been very much exaggerated. Dr. Lewis and I were able by coughing to get a pressure as high as 60 or 70 mm. of mercury. Rupture of the lung is not a real danger. We used a series of perhaps fifty or sixty dogs in our experiments and had no deaths from rupture of the lungs. The danger of emphysema is more real, but again this is exaggerated. In some sixteen cases in which careful microscopic sections of the lung were made by Dr. Lewis to determine the result of positive pressure, we found in most cases there was interstitial emphysema. These dogs did not seem to suffer and many of them lived for months before they were killed. None of them died from the effects of the emphysema, so it seems to us that emphysema is not necessarily a dangerous condition. Sauerbruch in particular has greatly emphasized the danger of infection and in his own experiments he found he had a good many cases of infection of the thorax, but it may be remembered by some of you in reading an account of his work that his cases were largely instances in which resection of the esophagus was made and this is notoriously a dangerous procedure from the standpoint of

infection. In these dogs which we experimented on and in which we used no particular precaution in forcing sterile air, we had no case of pleurisy or pneumonia.

There is one question I would like to ask Dr. Fell. I recollect reading somewhere that he had in some of his positive pressure work substituted a mask for a tube; that is, he used a mask for positive pressure instead of using the laryngeal tube. I was not here at the beginning of the paper and he may have brought that point out. It seems to me there is one time when the tube is better than the mask and that is when a human being has stopped breathing altogether. Our experience has been that if a dog is breathing at all the mask works all right. That is, respiration goes on very well, but if the dog stops breathing the air forced into the mouth goes into the stomach; the reflexes are destroyed and the air goes into the stomach and causes a great deal of dyspnea.

Dr. Edwin Pynchon:—Most of us I take it are familiar with Dr. Fell's excellent work. In my memory it goes back fifteen or twenty years. I have provided myself with reprints of his papers which I have filed away and preserved.

The principle of using negative pressure in the practice of medicine generally appeals to one as being valuable. In my special line of work compressed air is used and has been for years. Negative pressure, however, has been used comparatively little, for the reason that the facilities for producing it are imperfect. Some years ago I contemplated the construction of one or two tanks to be maintained, if possible, at a certain degree of vacuum but I never carried out that idea as I fortunately happened to get an idea that was much better. We are always provided in our offices with compressed air, and it occurred to me that it would be feasible to use the steam exhaust principle which is employed in operating steam-engines, so as to convert the compressed air or positive pressure into negative pressure. After experimenting I devised an apparatus which one can put in one's vest pocket. It costs $1.00, and with its assistance positive pressure can be easily converted into negative pressure. The one I use in my office is small and would not be so well adapted for general surgical work. I have had a larger one made, although I have never put it to use. I appreciated the fact that it would be valuable to have in case of asphyxia from anesthesia or for other purposes.

In order to be operated this device must be connected with a cut-off and compressed air. By operating the lever of the cut-off air is caused to escape, and as it escapes it produces a partial vacuum in the bottle, which causes suction at the inlet tip. By means of valves connected with my air tank I can easily regulate the pressure, as shown by the gauge, of the escaping air. By making proper allowance I thus secure a negative air gauge. I found that when my compressed air showed forty pounds pressure I was getting five and a half inches of negative pressure, and by partially closing the valves so that the forty pounds of pressure was reduced I could in a corresponding way reduce the negative pressure. I also found that I could instantly convert negative into positive pressure and that is the thing Dr. Fell does with his device. When operated in the way I have described negative pressure is produced, and when the escape hole is stopped positive pressure is secured. So by having gauges at hand to observe, this device could be used for the purpose described by Dr. Fell, when with the tube introduced into the larynx, and with this exit hole open, there would be suction or negative pressure. As soon as it is desired to have air go in the opposite direction this hole should be closed, when air will be forced into the lungs. Used in the crude manner I have described it would be dangerous, but it could be easily employed in laboratory work with satisfaction. In the use of this device an item of expense would be to have each operating room supplied with a compressed air plant and in my experience I have not seen a surgical operating room in Chicago that has such outfit, with the air pressure desirable to have. Compressed air in operating rooms could be used for other purposes. With compressed air available this device could be very easily employed for the purpose described by Dr. Fell, but it would need somewhat further elaboration in the way of controlling valves whereby safety could be secured.

Dr. S. A. Matthews:—Dr. Meltzer has demonstrated quite conclusively that if a continuous stream of air under a pressure of from six to seven mm. of mercury be allowed to enter the lungs, animals can be kept alive for several hours. His method is to pass a soft rubber catheter into the trachea to the point of bifurcation and let a stream of air enter through the catheter and return through the trachea outside the rubber tube. The lungs are distended and perfectly immobilized. By this method one can open the chest and not be bothered by any movements of the lungs. Dr. A. Carrel of the Rockefeller Institute has been using this method and recommends it on account of the immobilization of the lungs. Dr. Fell referred to the necessity of closing the chest after operation so as not to allow any air to remain in the chest. I have opened the chest in dogs some twenty-five times to ligate one of the coronary arteries, but in closing the outside wound I have never paid any attention to whether the chest was left full of air or not. None of the animals so operated on suffered in the least from pneumothorax.

Dr. Fell (closing the discussion):—I wish to thank the gentlemen for the kind manner in which they have discussed my paper and demonstration. I appreciate it very much. I wish to thank Dr. Ochsner for his kind words, and I believe he means every word he says. Dr. Richter spoke of the differences between the two types. We should be supplied with both the negative and positive methods. There are cases where they can all be utilized to advantage.

The whole subject should be taken up systematically, and more thoroughly understood. You can do some of this work better with a negative cabinet than without it. After a little while we will have negative cabinets everywhere, and positive methods so that we can use them. Now, this blower you see here requires the nicest kind of adjustment and care in adapting it to this work. The least movement of this "Globe" valve one way or the other will disarrange it so that you cannot do your negative work safely, and the same words may be applied to its positive work. I was surprised when I obtained the "Globe" valve how easily I could change the action of the work of the blower. The volume and pressure of air is controlled by the working of these simple rubber lungs. I have not had time to formulate the amount of pressure used and to work out every detail which later on we will do. I have found that negative and positive pressure ranges between zero and seven or eight mm. of mercury by this combination.

Dr. Capps asked if the face-mask would not answer as well as a small cabinet? The paper cited a number of cases in which it was used years ago with most satisfactory results, and I wish to show it as I think it should be used, and pass it around that you may understand it clearly. It is adapted to the face with the edges built up of wax as used by the dentists, and which with slight heat enables it to be readily moulded to the contour of the face. There is such a great variety of faces that I do not think you can arrange a mask to fit all without the method of moulding. Dr. A. J. Ochsner called my attention to a face mask with pneumatic edges, that could adapt it to the face, quite similar to that used by dentists in inhalations. One of them which I tried did not work satisfactorily, as the pneumatic edge was too resilient, and the air under pressure worked out along the edges. I have used the face mask for from two to eighteen hours with great satisfaction in cases of opium and other narcotic drugs, and believe if properly applied it may be valuable in surgical thoracic cases. It has been decried by some who seem to have improperly applied it.

As to Dr. Pynchon's apparatus, it is quite interesting and I should like to know more about it. Referring to the question of constant respiration by producing a certain pressure of atmosphere near the bifurcation of the trachea, that may be useful in many cases, but I do not believe it would have answered in many of my cases. I would be afraid to utilize it alone. I noticed this passive pressure in my work long ago. You have the blood circulating in the air vesicles, and if you keep up a circulation of air as deep as the bronchi, there will undoubtedly be an interchange of gases, the carbon dioxid from, and oxygen towards the blood through the tubular length of bronchus and bronchiole, before the point of greatest physiologic modification is reached.

If you wish complete inspiration and expiration and its natural results (proper interchange of gases) in both forced positive and forced negative respiration, I believe it can only be produced rhythmically. I have tried to keep away from dangerous conditions and cannot recall that I ever produced a pneumothorax of any degree. This is a fair record when two cases ranged from 72 to 78 hours, both lives saved.

PHYSICIANS' CLUB OF CHICAGO.

Regular Meeting, Feb. 4, 1910.

Dr. Wm. T. Belfield, the Chairman:—A joint meeting of the Press Club and the Physicians' Club is in effect a teachers' convention; for purveyors of knowledge and purveyors of health have been leaders in the evolution of humanity. It is eminently fit and proper that we should take counsel together; and there is precedent for the hope and the belief that this meeting may result in benefit to the public, for about two years ago the Physicians' Club arranged a joint meeting with the Lawyers' Club of this city; and it is a matter of common remark that during the last two years there has been a distinct decrease in the per capita dishonesty of Chicago lawyers.

The first topic to be presented is entitled, "What May the Medical Profession Expect from the Press?"

For the information of the distinguished speaker, I may say that medical men already have a very definite idea of what they may expect from the Press. We expect from the Press what a certain tramp got from a lady who was sitting on the veranda of a pleasant home, as the hobo came cruising down the road. Noting the lady's kindly face, he entered the yard, went down on his hands and knees and began to nibble the grass. "What are you doing there?" asked the lady. "Well, you see, M'am, I've had nothing to eat for three days, and I thought maybe you would let me eat a little of your nice grass." "Why, you poor man, you must be starved; go around to the back door, the grass is longer there."

"What May the Medical Profession Expect from the Press" will be disclosed by the editor of *The World To-day*, Prof. Shailer Mathews, of the University of Chicago. (Applause.)

"WHAT SHOULD THE MEDICAL PROFESSION EXPECT FROM THE PRESS?"

Prof. Shailer Mathews, Editor of "The World To-Day."

Mr. Toastmaster and Members of the Combined Session:—As nearly as I can discover, I am almost an outsider at this feast. I am a representative of the press only by way of an avocation, and I am certainly not a physician. I suppose, therefore, that I was asked to speak on the general principle that according to Scripture, wisdom is said to be found in babes and sucklings, and for much the same reason that we send our children to old maids to be brought up, and expect bachelors to give us directions on "Eugenics." There is always freedom in a broad experience when it comes to diagnosis and prescription.

The medical profession may expect, in the first place, from the press a little better treatment than it has been accorded in the past. I am naturally optimistic, and I venture this opinion in the spirit of adventure. The difficulty with the press, so far as anybody who has a serious undertaking in life is concerned, is that he has no news value except that in some way or other he can be interpreted into a freak or a fool. We have seen the effect of the press in hounding out of this city one of the most distinguished physiologists in the United States. The case of Dr. Osler is even more familiar.

The other day, a certain paper laying considerable claim to respectability, heard that I was indignant about a particularly brazen lie that had been told about the university. (The most intense devotee to non-resistance, feels his cheek getting a little raw after it has been turned indefinitely.) He sent over a most interesting member of his staff to see if he could not induce me to come back into the paths of reason, and give an interview. As we talked over the matter, I said to him, "Why don't you people of the press give men who are serious and really

endeavoring to do scientific work, a fair representation?" He said, in effect, "Because there is no news in that, and what a young fellow wants is more space or more pay, and he picks up something and writes it in such a way that he can get more space or more pay." I said, "So far as I can see, then, all of us who are trying to do scientific work are really at the mercy of young fellows who want more space or more pay on a newspaper." He said, "That is about the case."

Now, I speak without any personal reason for feeling the sting of misrepresentation, but I think that one thing that the medical profession ought to expect from the press and, as I said a minute ago, may expect from the press, is that scientific work shall be handled by men who have at least a kindergarten, rudimentary understanding of the vocabulary of the material with which they deal. (Applause.)

If the press wants to write up a baseball game, it sends a $10,000—more or less—man to report that game. And he does it well. He will not hold his job unless he does. If an editor wants a description of the fertilization of sea-urchins with chemical mean rather than genitourinary—whatever the term is—I am not well acquainted with it— (Applause) he sends anybody who happens to be loose. Now, is there not some way in which the newspaper press of this city can be induced to see that it has one of the greatest opportunities that ever came to the press? In a city where there are such magnificent medical institutions, why shouldn't the press of Chicago become noted for setting forth correctly, at least in a popular fashion, the things which are actually being done here in this city of ours? Why shouldn't the press of Chicago be as noted for its medical sympathy and accuracy as the Springfield *Republican* is for New England conscience. (Applause.)

The second thing that may be expected of the press by the medical profession is a growing appreciation of the power of suggestion when cooperative with the medical profession. I don't know how much you believe about suggestion, but I know that the press of the country, notwithstanding the vagaries to which I have just alluded, is really doing a marvellously good thing in the publishing of the results of sane medical instruction. What would the movement of the Anti-tuberculosis Crusade be to-day without the cooperation of the press? What would the movement against some of the other evils with which you gentlemen are always dealing be without the support of the press? While, therefore, it is fair to say that there are great limitations in the way of handling any form of scientific undertaking, there is yet coming to the press a splendidly enlarged vision of the significance of the entire process of education which lies back of any profession like the medical. I speak as a layman, as my vocabulary evidences, but I never feel the need of a doctor so much as after I read in the papers the disease that somebody else has had. That in itself must be a help to the medical profession. If you can get enough people anxious about symptoms, gentlemen, the medical Utopia is about to dawn!

But, in all seriousness, the press can carry to the community at large the message of sanity in medicine, of sanitary living, of elementary hygiene, are we not as members of the press, cooperating with you gentlemen, members of this profession, in benefiting our day and generation?

I well remember, when I was a boy, that the only medical literature we had was kept on the top shelf of our closet where the boys would not find it. It was somebody's "Family Physician," I forget whose it was, but I used to love to read it. It gave me nervous thrills. I had all the symptoms from the first page to the last. To-day if you pick up any magazine of any serious purpose whatsoever, you can find splendidly expressed and well-balanced advice as to how to live a clean, healthy life. You can inspire people through the press if you can come to the point of reasonable cooperation. I am convinced that cooperation is possible between any scientific profession and the press, if the matter is brought up in a serious way.

Any reader of to-day's newspapers will say that they are vastly improved in this respect over what they were three or four or five years ago. I recall how one paper once gave an entire page to a distinguished Chicago surgeon who had taken

a special train which, according to this story, had hit a woman. The full parabolic curve of that woman as she rose from the track and fell near an ambulance was charted by this newspaper. I don't believe that sort of thing will be repeated. The press will outgrow such provincialism.

To put it all in a nut shell, "What May the Medical Profession Expect from the Press?" I think you can expect that the press is going increasingly to represent the better tone and the better mind of the medical profession. It is not going to come all at once, but the average publisher really wants to get the facts and to present events reasonably fairly. If there is a sensational attachment to any news you have got to expect the newspapers to work that up. You like to see it worked up in the case of other folks, and other people like to see it worked up in your case. That is not a highly desirable situation, but it is a situation that is improving every month as we come better to understand the real purpose of the two professions.

I have a scientific friend who has just established a degree of cooperation with a newspaper as regards news in his particular field. If information is telegraphed the paper in this field it calls him up to discover the truth. I call that a remarkable advance in that field. If I would tell you who it was, I think you would tell me that there has been a splendid precedent established. If we could cooperate, the press and the profession, the public at large would be benefited, because of better ideas, and cleaner thought. Such forces as these will make it easier for the honest physician to succeed, and make it possible for the clean-living man also to succeed. (Applause.)

The Chairman:—The Chicago paper having the largest daily circulation claims to print about one-third of a million copies daily. It is bought largely by men and women returning from work, to be read on the car on the way home. They seek especially the day's news and the classified ads.

Over on Van Buren street there is published a magazine which circulates over two million copies a month. It goes into perhaps two million homes. It is bought not for the news nor for the classified ads, but as a source of information. It is not thrown away when a street car reaches its destination, but is read and discussed night after night in the family circle.

The scepter of popular education has passed from the pulpit, from the lecture platform, from the daily paper to the periodical. It is gratifying that many of these periodicals are rising to the level of their opportunities; that they present to their readers in popular form the best thought of the time, not only in arts and sciences but also in hygiene. There is arising a school of writers on popular medicine who are doing what our profession has long neglected to do, that is, to supplant patent-medicine makers and quack doctors as the source of popular instruction in medical topics. These writers of popular medicine for the periodicals, of whom Woods Hutchinson is easily first, are doing good work for the public and the medical profession.

It is sufficiently obvious that with a better comprehension of disease, the public will have a better appreciation of the intelligent physician, and less use for patent-medicines, patent "sciences" and medical fakers of all kinds. The admirable instruction of the public in hygiene by Chicago's Commissioner of Health, Dr. Evans, and Indiana's secretary of sanitation, Dr. Hurty, illustrates the benefit accruing to the public directly, and to the medical profession indirectly, through the discharge of this function by competent physicians.

"The Press as a Public Educator in Medicine" will be discussed by Dr. Woods Hutchinson of New York.

"THE PRESS AS A PUBLIC EDUCATOR IN MEDICINE."

Woods Hutchinson, M.D., New York City.

Mr. Chairman and Gentlemen:—I would like for one moment to rise to what in legislative halls is called a question of personal privilege, just far enough to explain what my own feeling and personal attitude is toward this great movement for professional education, medical education of the public.

This is a campaign which has only just begun, and I am proud of what little share I may have been able to take in it, but my own feeling simply is, that in so

doing I am merely the mouthpiece of the profession; that I simply represent it and try to tell to the public what it believes, thinks, and has found out. There is nothing in the slightest degree personal about it, and the only reason why I happen to have done it rather than someone else is that I happen to be able to tell what every doctor knows, in words in less than seven syllables. I am simply *box et prætirea nihil*—a voice in the wilderness of the public prints.

There can be no question that the union between the press and the medical profession, the union between the editor and the scientist, is one of the most useful and most hopeful for our future progress. Part of this changed relation is due to changes which have taken place, as Professor Mathews has indicated, in the interest of the public and the attitude of the press, and part of it due to changes in the attitude of the profession.

There are, of course, certain dangers and difficulties to be avoided. We hear and have heard criticisms and complaints on the part of the profession, and on the part of scientists generally, of the unskilful and misleading reports published about them in the press, that their work was written up by men who knew nothing at all about it, and all sorts of strange accounts were given of the new discoveries and new movements in science and medicine. That was true, and it is true to a certain extent to-day, but I want to say frankly and plainly that a large share of the fault for that condition rests upon the medical profession and the scientists, rather than upon the press. There has been a traditional sentiment, noble and dignified in its origin, that it was something derogatory to the dignity of the profession to discuss medical matters in public. This had its beginning in the peculiarly delicate and confidential relations between physician and patient—they were trusted with secrets of the most sacred nature, so that matters of this nature were never given to the public or discussed in public—and gradually extended to all medical knowledge. That taboo has been lifted, and the profession is now willing to tell all that it knows of medical science, all that it can clearly and definitely express for the benefit of the public, without fear that it will raise any criticism, or any serious opposition in its own ranks.

Not very long ago medicine was a matter of mystery, not only in external appearance, but in reality. There was a good reason for the silence that was assumed by the profession fifty years ago. It had little to tell, little that it could make interesting to the average layman. But all of that is changed. Now we know something positive and can tell it logically and clearly.

I know of nothing that exceeds in interest and in fascination the history of some of our great devastating diseases. Their personality and their peculiar course have a positive dramatic aspect. I hardly perhaps feel such enthusiasm as old John Abernethy did when lecturing on one of his favorite operations, lithotomy, he dilated on the interest of the operation, and the comfort given to the patient, the suffering from which he was relieved, and waxed more and more enthusiastic, but finally he said, "Gentlemen, if there is no cutting for stone in heaven, I don't want to go there." That's the right spirit of love for and interest in good work. (Applause.)

There is abundance of interest and news value, even of legitimate sensationalism, in the wondrous progress of and improvements in modern medicine and surgery.

There is, of course, always the danger of being misunderstood. That is a thing we always have to face, but I think every member of the profession here will agree with me that the time for distrusting our patients, and distrusting the intelligence of the laity is past. We must take them into our confidence, and the patients with whom it is best and easiest to get along to attain the results we want, are the patients who have the broadest education in matters scientific and matters medical. We want cooperation in order to carry on our campaign against disease.

I think that there will be little difficulty on that score, with the training and education in hygiene and physiology which is going on in our public schools, colleges and universities, and spreading broader and broader every day.

We have no reason to distrust the intelligence, fair-mindedness and good judgment of the great mass of the public, the great mass of the plain people. If they are properly informed upon these subjects, and their sole source of information is no longer the patent-medicine advertisements and the columns devoted to so-and-so's Manhood Restorer, it will soon become practically impossible for any other than a competent, scientific physician to maintain his standing in the community. That day is rapidly coming, and it will not be long before the question of maintaining the standards of the profession will be lifted off our shoulders as a profession, and trusted absolutely to the intelligence and good judgment of the educated general public.

The other difficulty which we have to face is the one already alluded to by Professor Mathews, the sensational distortion of the truth, the "playing up" of an incident so it will make a "good story," and the fine art of writing headlines.

There is a certain amount of truth in the complaints made about this kind of a thing, but I want to call your attention to one thing, and that is that no newspaper likes to make a fool of itself. The writer or reporter who writes up a scientific story, and then finds it riddled with criticism and ridicule from all sides, is not likely to get promoted for that kind of a "scoop." The newspapers, I think, are more desirous to get at just the facts, and nothing but the facts, than *any other element or agency in our civilization at the present date.* They don't want to get nonsense and spectacular misrepresentations if they can get the real truth; and if we will cooperate with them and meet them half way, and see they do get the truth, then a large part of this complaint of misreprsentation and distorted representations will disappear.

There is no flight of the imagination could have been more sensational than the actual progress of science within the last twenty-five or fifty years. Baron Munchausen himself could not have invented in advance its triumphs. If we had been told fifty years ago that we could take the serum from a horse and inject it into the veins of a child choking to death with diphtheria, and save that innocent's life, we would have said it was romancing worthy of a De Quincy or a Jules Verne.

If we had been told fifty years ago that we could by passing a current of electricity along the nerves deaden them so that operations could be performed without pain, and the individual recover at once, when the current was shut off, we should have said that was a pipe dream. There are plenty of striking new things occurring every month, and all that is needed is to describe them clearly and vividly.

I think the time will come when every well-equipped paper will have on its staff a trained medical writer, when the medical student and the recent graduate will look for a position on the medical reporting side of a paper as one of his legitimate fields of activity.

I don't know how it may be in Chicago, but I know that in New York City at least four or five out of the leading great dailies have a medical consultant as a member of their staff to whom is referred most of the medical and scientific stories and reports which come in, in order to see whether they are reasonably near the limits of the truth and safe for publication.

The matter is adjusting itself, I think, and we must play our part in that adjustment, which will be for the benefit of the community and the progress of the race in every way.

Another great reason why the press and the profession are coming together, and to know one another, is the change that is taking place in the nature of medicine itself. Medicine, together with our sciences, have been rewritten and revolutionized within the last fifty years. There was a time when the principal function of the doctor was to give drugs. All he wanted to know about a patient was enough to decide what was the proper thing to give him. The attitude of the laity was the same. They were willing to believe almost anything they were told; what they wanted was "something to take." It was a good thing to assume an air of mystery in dealing with them, simply to order them to obey orders and ask no questions about it. That was the only kind of a doctor that could make a living in a great many districts of this country twenty-five years ago, and it is so

yet to a certain degree. We gave drugs, believing they would cure, and our patients demanded them in the same faith and would accept nothing else.

Our attitude was something like that of the colored practitioner in the South. On one occasion he was called to a case of gunshot wound of the abdomen. A white colleague was called at the same time but got there after the colored physician was in charge. The treatment prescribed was a pill of huge size, which the patient was barely able to swallow. He recovered rapidly. A few weeks later the white doctor met the colored doctor on the road and stopped him and said, "Doctor, if you don't mind, I'd like to know what that pill was you gave that patient." The old darkey answered, "Sutenly, Marse John, I'm glad to tell you anyfin. Dat pill was made of equal parts of alum and rosin." "What under heaven did you give that to a man with a wound in the abdomen perforating the intestine for?" "Why, Marse John, I'se 'sprised to heah you ask such a question," he replied, "de alum was to pucker de parts together and de rosum was to make 'em stick." (Applause.)

That attitude toward drugs has gone. I think I violate no professional secret in saying that we doctors are getting about as tired of giving drugs as patients are in taking them. They are only temporary measures. For a permanent cure, you must appeal to something else outside of the realm of drugs, and outside of the realm of medicines, and that is the determining reason for this evolution in the field of medicine. Our methods of treatment have been almost completely changed, yes, revolutionized within the last twenty-five years.

Take our treatment for tuberculosis. Thirty years ago we administered certain remedies to a patient which we hoped would cure him. We looked him over and decided he had consumption and gave him these drugs. He took them and either got better or fell by the wayside. We are accused of being too ready to write prescriptions and give drugs instead of getting to the root of the matter and trying to cure the cause of the disease, but here is our problem. The patient is one of our 70 per cent. of workingmen, the bone and sinew of the country. We may give him a prescription and tell him to get it filled, and fifty cents will pay for it, and it will last two weeks, and he can come and get another.

But, if we do our duty, we will examine the man thoroughly, ask him what sort of a house he lives in, what wages he gets, what food he lives on, how much vacation and how much care can he take and give himself. Then tell him he must go home and live on the very best of meats and butter, take from six to a dozen eggs a day at sixty cents a dozen, sleep in a room with the windows wide open, whether he has fuel to keep him warm or not, the room must face the south and have at least two windows in it, and he must go to the country for at least six weeks or three months. Will anybody tell me where he can take that prescription and get it filled for fifty cents? The community must come in and help to fill that prescription. The community must be ready to cooperate with us in our scheme of cures. There is no such thing as the profession fighting disease single-handed any more. It needs the assistance of the community and the assistance of the state at every step, and this combination with the press is the most hopeful, useful and promising means of its getting that assistance.

That is not the only change coming in medicine of the future. We are getting tired of just being called in after the horse is stolen, to lock the stable door. We want to get an opportunity to mould humanity in the making, to work with and play with life, and make of it as we will for the benefit of future generations. We want to be able to say that every child at birth shall be given such food, shall be given such surroundings, shall be given such opportunities for play and fresh air as shall enable it to develop into the most perfect man or woman which its heredity will permit it to develop into. We are demanding as physicians that in some way the right to live and to develop his highest possibilities shall be given to *every child that is born in the community*, no matter where that child may be born.

We know perfectly well that two-thirds of our pauperism, two-thirds of our dependents, and two-thirds of our crimes are caused by under-feeding, unhealthy surroundings and neglect in infancy and childhood. We are getting to the point

where we want to be allowed to mould life at the time when it can be moulded, and wipe out the stain of poverty, pauperism and crime in every community.

To progress toward that we need more representation, more power in the public life. We doctors have become more or less impatient of simply prescribing for individuals. We want to prescribe for the whole community. We want representation in our government, and in the Cabinet of the United States itself. (Applause.)

Objection is made on the ground that there would have to be a new department created. It is not necessary, because there is one there now, name and all, "The Department of the Interior." That belongs to us as if it had been created for us. I need not tell you how fortunate the "interiors" of all this country would be if we could get such a Secretary of the Interior as your and our Dr. Frank Billings. (Applause.)

We are becoming impatient in another direction. We think we should have something to say about the treatment of crime. We know that the criminal is under-sized, imperfectly developed, and abnormal mentally and physically as well as morally. Statistics have shown some curious physical differences among classes. Take one case: The membership of the Royal Society of England as contrasted with the criminals in the prisons of London shows that these members of the royal society are four and a half inches taller, forty-five pounds heavier, and four inches more around the chest. That might be taken as a matter of reason solely upon heredity, but we are taking a much more hopeful stand as to the influence of environment, and that is another reason why we believe that medicine should be given greater power and sway in the state.

There is another comparison even more significant, and that is the contrast between the criminals and the police who have to handle them. Both of them are recruited from the 75 per cent. of the working classes. One of them, an example of what can be done by proper feeding and care, and another an example of what is done by persistent neglect. The members of the Metropolitan Police force of London average five inches taller and twenty-five pounds heavier than the criminals. If we could only take the criminal at birth and watch him, feed him, train him, correct his physical defects and his abnormal tendencies, and give him such schooling as he needs; then if that fails submit him to one of those painless sterilizing operations which have now been devised by the medical profession, and which your president has played such an important part in bringing before the public. Reform the criminal who has the possibilities of correction in him, sterilize the incorrigible, and in a short time our police system would be reduced to about one-tenth of its present expense and our almshouses and asylums would be half empty. Any intelligent system of medical and rational location of crime and pauperism would save the community a hundred times its cost.

The coming together of the press and of the medical profession is one of those unions which is full of promise and full of hope. It means that the forces of the world of scientific progress are acting to-day for humanity, are going to do for human beings what they have already done for commerce, for production, for the means of transportation and of communication.

The sciences born of the wonderful discovery of Charles Darwin are now to uplift and improve man and a nobler and higher enterprise for these two great professions to engage in could hardly be imagined. We are to be the ministers of the religion of the future, the religion of humanity, the religion of service. I am sure that our feeling is that our highest obligation is to the race, that we are simply what the past has made us. We owe everything we have and are to the past and the future of the race has the first mortgage on us, and the best that is in us.

The only reward that we care for, the only immortality that we are concerned about is that based upon having made the world a little better than it was when we came into it.

Our hope would be in the words of George Eliot:

Oh, may I join the choir invisible
Of these immortal dead who live again
In minds made better by their presence here.

Be the sweet presence of a good diffused,
And in diffusion ever more intense!
So shall I join the choir invisible,
Whose music is the gladness of the world.

38 East Forty-ninth Street, New York.

The Chairman:—In Germany and Austria the powers that be have a habit of imprisoning hostile editors. Many opposition papers are said to provide for this contingency by keeping on the editorial staff a gentleman known as the Prison Editor. When a husky minion of the law invades the editorial sanctum with a warrant he is introduced to the prison editor, who accompanies him to jail. That is all the Prison Editor has to do with the editing of the paper.

The governors of Illinois, much to their regret, are not authorized to imprison editors who criticize them; but they have devised other means for protection against the editorial bombardment that politics sometimes requires. Among these breastworks is a very respectable body of citizens known as the State Board of Charities. The function of this board is merely advisory; they are supposed to advise the boards composed of petty politicians who really administer the twenty institutions of the state that take care of the insane, imbecile and epileptic. They have no power to control these institutions. The members of the state board receive no salaries, dispense no patronage and have no chance for graft; they are respectable people, because nobody else would take the job.

The gentleman who for years has been and still is the president of the State Board of Charities, is the acknowledged leader of the medical profession in Chicago, whose office swarms with millionaires, because nobody else dares venture in there. Yet that man spends many days every year without salary, patronage or graft in performing the advisory function of the board.

Well, you ask why does he hold such a job? What does he get out of it besides abuse? Truly, he gets his name in the papers a good deal; and some of us little fellows would be willing to take some of the abuse to see our names in the papers. But he does not need to do that; he has other ways of getting his name in the papers. Every time you read in the papers of the death of a Chicago millionaire you also read that his physician was Frank Billings! Well, I'll tell you what he gets out of that job besides abuse; he gets the opportunity to use his forceful personality, his great social and professional influence in securing a square deal for those who are mentally lame, halt and blind—the insane, imbecile and epileptic. (Applause.)

Without much assistance he has put out of their jobs about one hundred petty politicians throughout the state who formerly composed these twenty boards of trustees at the different institutions; and has supplanted them with one board of responsible men of fairly decent character; one of them is actually a physician! This board, of course, is made up of mere mortals, and is appointed by a politician, the governor; hence its administration may fall far below the ideal; yet it must needs be an improvement upon the twenty boards which formerly administered the affairs of the unfortunates in these institutions.

"The Press in Its Relation to Legislation for the Improvement of Charitable Institutions and Medical Reforms" will be discussed by the president of the State Board of Charities, Dr. Frank Billings. (Applause.)

"THE PRESS IN ITS RELATION TO LEGISLATION FOR THE IMPROVEMENT OF CHARITABLE INSTITUTIONS AND MEDICAL REFORMS."

Frank Billings, M.D., Chicago.

Mr. Toastmaster, Fellow Members of the Physicians' Club and Gentlemen of the Press Club:—I am somewhat embarrassed by the introduction of the toastmaster and my confusion at this moment is not made less by the fact that I am a

speaker to-night although a member of the Physicians' Club, and by the additional fact that I am to speak on a subject of which I know but little and that gained solely by my relation to the public institutions of the county and of the state during the last eight or nine years.

I had intended to speak of the press in its relation to legislation in an analytical way; that is, to give my own impressions of the press in relation to medical institutions of all kinds. Upon second thought it came to me that this in a sense would be a personal opinion and that naturally others would have an opposite opinion, so that finally I have concluded to talk to you in a narrative way and to recite some of the conditions of the charitable institutions of the county and of the state as seen by me during the last eight or nine years.

Many of you will recall the fact that about nine years ago there was much in the daily press of an alleged abuse of patients at the County Hospital. This news resulted in the appointment of a committee of prominent people of Chicago to investigate the conditions at the County Hospital. The committee included one or two physicians, lawyers, a judge and business men and others. The committee visited the institution, made an inspection of all of the departments and finally heard witnesses as to the conditions at the hospital, in the county building. The committee summed up the results of its investigation and made certain recommendations for improvement. Some of these recommendations were adopted and others were not carried out because of the impracticability of them or they were entirely disregarded.

Immediately thereafter the press contained many articles on the institutions at Dunning and of alleged abuses and unfavorable conditions, especially in the hospital for the insane. An attempt was made to appoint a committee to examine into the institutions there as had been done at the County Hospital. I was requested by the president of the Board of County Commissioners to accept a place on that committee and I refused. I gave as the reason for the refusal to serve that I did not believe in that kind of investigation because it merely examined into conditions for the time being, often did not get at the root of the matter and the recommendations of such a committee were usually not acceded to, or if the attempt was made to carry them out it was done in an ineffectual way. A few days later I was again asked if I would go on the committee and what conditions I would demand to make me accept a place upon it. I replied that if those in power would select a committee from a group of individuals nominated by me; if the Board of County Commissioners would recognize the committee as an official one; if the life of the committee should be commensurate with that of the County Board; if the committee would agree to visit the Dunning institutions week after week; if the Board of County Commissioners would accept the report of the committee week by week and would act upon the recommendations of the committee from time to time, I would accept. Much to my surpise the bluff was called. The committee as a whole or members of the committee visited Dunning from that time on during the next year or longer, made weekly or semi-monthly reports to the Board of Commissioners and that body acted upon the recommendations of the committee from time to time with results which have since been considered of the greatest importance to the county.

The conditions at Dunning at that time were woefully bad. The buildings, or a majority of them, were old, insanitary and the place much overcrowded, so that many patients slept on the floors and the amusement hall and other places were occupied with beds in an ineffectual attempt to relieve the situation. When the committee made its report to the Board of Commissioners there were usually from half a dozen to a dozen of the reporters from the various papers present. These reporters learned of the results of the committee's investigation at Dunning and the newspapers of that day contained short statements which expressed the conditions as they existed. The press of the city took an interest in the investigation and taught the public the exact conditions of the institutions at Dunning. At the beginning many of the members of the County Board presented a hostile front. This was especially true of the committee of the commissioners who had the insti-

tutions of Dunning in charge. William Busse, the present most efficient president of the Board of County Commissioners, was chairman of the Dunning committee. He, like the others, could not understand the motive of the members of the committee of investigation who would go to Dunning week after week and examine that institution. He and the others thought there must be some ulterior motive but he and the others soon learned differently and helped in every way in their power to facilitate the work of the committee. There can be no question that the press had its influence upon the members of the Board of Commissioners for the report of the committee was made public and the members of the board knew very well that if conditions were not bettered at Dunning they would be blamed for it. Finally the committee of investigation recommended that new buildings be erected at Dunning and that a sufficient sum of money be appropriated to make the old buildings sanitary and free from danger to the inmates from fire or other accident. The County Board accepted this recommendation and proposed that at the next election five hundred thousand bonds be issued for this purpose and also to erect a pavilion for sick children at the Cook County Hospital grounds in the city.

The question of voting for bonds meant an increased county taxation which necessarily would meet opposition from taxpayers. Such a proposition would without the support of the public be lost. The press at once learned of the proposed bond issue. It is interesting to know that practically every member of the committee of investigation was communicated with by practically the whole press of Chicago to know the attitude of the committee in regard to the issue of bonds. When the press was informed that the committee had recommended the bond issue to the Board of Commissioners and the purpose of it, every newspaper of Chicago supported it, with the result that the bond issue was carried. This money was expended in the improvement of the old buildings and in the erection of new ones at Dunning as well as for the institution of the water cure, the establishment of a training school for nurses and other modern improvements for the care of the insane. Eight years ago the superintendent of Dunning was a layman whose sole knowledge of the position was to administer the institutions as economically as possible and without a thought of other care. In other words, it was purely custodial. The committtee recommended the appointment of a medical superintendent in his stead and met with the most strenuous opposition from politicians. It was only with the help of the press and the publicity made possible by it, that the Board of County Commissioners were forced to appoint a medical superintendent. The first one appointed proved inadequate and then certain members of the old committee, then out of existence, recommended the physician who proved to be the proper individual and who possessed great personal force, which finally brought about order and proper administration of the institutions. That man is present to-night and I am very glad to give the credit to Dr. V. H. Podstata. Dr. Podstata remained in that position until he made the institution one of the best in the state, and then was called to Elgin to do for that institution what had been done for Dunning. His successor, the present superintendent of Dunning, Dr. Wilhite, has continued the good work begun by Dr. Podstata, and we may say of Dunning that it is not only equal to that of any in the state but perhaps better and as good as any in the country.

The State Board of Charities went out of existence on the thirty-first day of December, 1909. Under the new law the Charities Commission takes the place of the old State Board of Charities. Like the State Board of Charities, its duties are inquisitorial. It has not the onerous fiscal duties of the old board but has the power to call together annually all of the state charitable bodies in conference for the purpose of consideration and discussion of conditions present and future. In December, 1905, I was requested to go upon the State Board of Charities and I refused. I was requested to give the reasons why and said that in addition to the fact that I had other duties and obligations which would prevent it, I did not care to go upon a board constituted of individuals who represented politics, religion or any other object. That I had no objection to the vocation, religious belief, etc., of individuals upon such a board but that I would not serve with them on any basis except that of men and women.

I supposed the matter was settled, but about ten days later I was again importuned and asked what conditions I would demand to take a place upon the board. I recalled the conditions named in the appointment of the committee of investigation of the Dunning Institutions and replied that if the governor would appoint the Board of Charities from a group of individuals nominated by me; if the board constituted should have the power of appointment of its secretary; the choice under civil service of the employees of its office, I would accept. To my surprise this condition was acceded to.

The Board of Charities so constituted was able to demand certain conditions of the state authorities. Five years ago the condition of the majority of the hospitals for the insane and the institution for the feeble-minded were much like those of Dunning of eight years ago. Two of the institutions, that of Watertown and Bartonville, were new and the physical properties of those institutions were good. All of the other institutions were old, the physical conditions poor and the condition of the inmates as to comfort, the danger from fire and other accidents was bad. The exact condition of the physical properties was ascertained by a survey made by the state architect and by a civil engineer at the request of the Board of Charities. The treatment of the insane and feeble-minded in all of the institutions of Illinois was purely custodial. Practically no curative treatment existed. Practically no attempt to reeducate the chronic insane was made. Practically no training school for nurses existed in the state institutions. There was no encouragement for the members of the medical staff of any institution to do good work. The blanks of each institution upon which histories were kept differed in each institution; usually nothing but the necessary legal blanks were filled and filed. No data were kept of the injuries, either severe or trivial, or when, how or what degree of injury. There was no study of insanity either before or after death. In short, the treatment of the insane and of the feeble-minded was medieval. At the first meeting of the legislature, that is, January, 1907, the condition of the state institutions was made known and recommendations made for their improvement. Through the invitation of the chief executive of the state I was able to address the members of the senate and of the house in the chambers of the Supreme Court; but few attended and these were indifferent and showed in many instances an attitude of opposition to anything which the Board of Charities would do for the state institutions. The statement was made to them of the physical condition of the properties and especially of the lack of comfort for the inmates and dangers from fire and other accidents of some of the old institutions, particularly at Kankakee, Elgin, Lincoln, Jacksonville and Anna. They were told that at Elgin the risk of fire was great. In the old building there was a direct communication between the attic of the main building and the two wings by means of a wooden box ventilator. That the attic was filled with poorly insulated electric wires and dust affording the best means of spontaneous combustion and that a fire so started would have free access to the two wings of four stories crowded with men and women respectively. That the hose of the reels in the halls of these wings was so rotten that it would fall apart when taken down. That the hose plug was so rusty that it would require a hammer to loosen it. That the fire plug in the yard outside was so rusty that a blacksmith had to be called to undo it and that the fire whistle on the engine house would not blow. This statement made them sit up and listen but met with denial upon the part of some. It also met with a prompt response from the press and some of the newspapers investigated the matter and confirmed the conditions as announced by the Board of Charities. A hostile legislature of 1907-8 became less so and even friendly in 1909, not because they loved the members of the Board of Charities more, but because the newspapers made public the findings of the State Board of Charities in its investigation and people all over the state made demands upon their representatives for a better condition of things. As a result of that publicity the legislature had been forced to recognize the need for improvement in the institutions. Much money has been expended, much has been done, much more needs to be done before the conditions will be anywhere near ideal; but now in all of the institutions of the state the inmates are as a rule comfortable because of good beds and

proper bed clothing and better sanitary conditions. Fire risks have been made much less, risks of accidents by burns from unprotected steam radiators and sharp projections of interior woodwork have been modified and made good so far as is possible in a short period of time. This improvement has been made possible because of the demand made by a body of men and women whose purpose was solely philanthropic and with "no axes to grind." This was recognized by practically the whole press who gave support to every effort made for improvement and by that publicity forced the state authorities, both executive and legislative, to do what was done in the improvement of the state institutions.

I will not take your time to minutely describe all of the improvements in the physical properties; in the developement of an *esprit de corps* in the medical staffs, in the formation of training schools for nurses and attendants; in the establishment of shops and encouragement of farm work for manual training and reeducation of the chronic insane; of the institution of the modern hydrotherapy in each institution; the establishment of a state psychopathic institution presided over by a well trained, modern alienist to teach the members of the medical staffs of the state institutions modern methods of work; of the adoption of uniform blanks in all of the institutions and finally of the change in the law which places the management of the state institutions in the hands of one board in place of the large number of individuals who acted as trustees of each institution. All of these measures, as I say, received the support of the press of this city as well as that of the whole state. The exception to this was in the case of a few newspapers which were conducted by individuals who were directly opposed to the state executive or of persons who were more or less disturbed by the changes brought about in the institutions. These newspapers not only opposed the measures recommended by the Board of Charities and supported by the great majority of newspapers of the state, but even went so far as to whip the governor over the shoulders of the State Board of Charities. Newspapers are not unlike individuals, and those who manage them may differ in opinion as do individuals. Personally, I think that every fair minded citizen of Illinois, including the editors of the papers who appeared to be opposed to the propaganda of the Board of Charities, were in reality in favor of those reforms.

Finally, one may say that the press is of enormous value in the attempt to right a wrong in any institution and particularly in the institutions which care for the dependent of a county or of a state; that this is brought about chiefly by publicity through the press. Publicity is the safeguard against maladministration and abuse of charitable institutions. Without the press publicity could not exist.

Already I have talked too long. Much more could be said. As I announced at the beginning my talk has been of a narrative kind and I would leave it to you to judge of the influence of the relations of the press to the improvements of charitable institutions.

100 State Street.

The Chairman:—Only a journalist can realize the wear and tear on the nervous system entailed by the discharge of his daily duties. We physicians know that wear and tear on the nervous system weakens the heart and the circulation, and that one of the results of a poor circulation is cold feet.

Our secretary's effort to secure a newspaper man to discuss the next topic, "Patent-Medicine Advertising," has disclosed an alarming epidemic of cold feet among Chicago journalists.

The first one who agreed to respond to this topic about three weeks ago notified the secretary a few days later that he could not appear on February 4 because he had just learned that one of his wife's cousins had made arrangements to die on that date. Another, who about two weeks ago accepted the responsibility, notified the secretary a little later that if he should appear on this occasion he believed he would die himself.

This afternoon the secretary swore out a warrant charging John Doe with manslaughter, and served it upon one of the most versatile newspaper men in the city.

"Patent-Medicine Advertising" will be discussed as little as possible by Col. W. L. Visscher. (Applause.)

Colonel Visscher responded with several witty stories involving the medical profession.

The Chairman:—It is said that Bulwer Lytton created the modern conception of Cardinal Richelieu; that his master-strokes broadened the Cardinal from a crafty politician into a statesman. It is certain that William A. Evans has created the modern conception of a health commissioner; that his master-strokes have broadened that official from a sanitary police officer to the trusted medical advisor of a metropolis.

"The Relation of the Press and Physicians to Departments of Health" will be discussed by Health Commissioner Evans.

"THE RELATION OF THE PRESS AND PHYSICIANS TO DEPARTMENTS OF HEALTH."

Dr. Wm. A. Evans, Commissioner of Health.

Mr. Toastmaster and Gentlemen:—I recently read in the afternoon papers a story of the life of Sir John Mandeville. A bit of his life is as follows: He was born in 1300, and in 1323 he left his home, stating that he intended going around the world. He traveled for thirty years, or absented himself from his home for thirty years, and at the end of that time returned to his home, and gave out the story that he had been around the world. This story was embellished in each detail. He told the things that he had seen in various parts of the lands through which he had traveled, and from the stories told there grew up many of the romances that persisted for centuries, and persist in some measure to the present day, the story of the crocodile's tears, and many others. In the great multitude of stories which he told there was but one true one, and that was that the world was round. The peculiar part of this narrative is that the lies which he told were accepted as true for several hundred years, and the only truth he told was universally recognized as a lie.

A condition such as that could not obtain at the present time, and this is largely the result of the growth of common information for which the newspaper is responsible. We are accustomed to charge that the newspaper is incorrect, and we are accustomed to charge it with gross eccentricity, but the fact remains that no force has done quite so much for the spreading of exact truths or truth that is approximately exact as has the newspaper.

I believe there is one thing by which the department of health can be judged more than any other, and that is by its publicity department. Departments may fail in several particulars. There may be good departments of health, without a proper regard for publicity features, and there may be poor departments of health in which there is much exploitation. On the other hand, there cannot be a good department of health and a department of health doing effective work that does not have a good publicity department. The reason for this, gentlemen, is as follows: The efforts of a department of health represent at every step an invasion of property, individual rights and liberty. The people as a whole are to be benefited through the work of a department of health, and unless there is a well-directed effort toward marshaling forces, towards making those latent forces active, there cannot be a proper discharge of the duties of a department of health. It therefore follows that there can be no efficient Department of Health without a proper regard for its publicity functions.

We are thoroughly cognizant in our department of the fact that the credit for education in these matters and the doing of things in this very community rests largely with the press of the community.

There is another force that goes still more widely and finds audiences peculiarly receptive. It carries a message in which there is a guarantee of correctness. I refer to the educational influence and to the educational effort of the family physician, of the practitioner of medicine. The greatest part of the education of the people in right living is not the work of the department of health, nor the work of the press, but it is the work of the practitioner of medicine.

There is another way in which the department of health performs its work and receives credit that belongs rightfully to others. If a department of health administers to the wants of the city in which there is a reduction of the death rate, a decrease of disease, the credit for these changed conditions and improvements goes to the government agency, but the fact remains that accuracy in vital statistics and accuracy in diagnosis, the results from treatment, improvement in death rates and sickness rates, and improvement in the development of the people are more largely the result of good medical service than any other single factor or any other group of factors. In the great work of educating the people to understand the laws of living and the sanitary conditions necessary to produce human happiness, there are several cooperating agencies. There are the press, the department of health, and the practitioners of medicine, and all the department of health can rightfully claim, and all it would wish to claim, in fairness, is that it might be said of it that it is the guardian of a man's life. (Applause.)

The Toastmaster:—In arranging this meeting, there has been a little diversion from the practice of the meetings of the Press Club, that is to open the meeting with prayer and close it with benediction. We will overlook that this time. We will therefore now adjourn.

CRAWFORD COUNTY.

The regular bi-monthly meeting of the Crawford County Medical Society was held Thursday, March 10, in the Carnegie Library, Robinson. The president and vice-president being absent, Dr. Frank Dunham was elected president pro tem and called the meeting to order. The minutes of the previous meeting were read and approved. The following members were present: Drs. Midgett, H. N. Rafferty, Kasdorf, Cato, T. N. Rafferty, Price, Newlin, Dunham, Ikemire, Firebaugh and Lowe. The name of Dr. Geo. Fritz being proposed for membership into the society, it was moved and seconded that the rules of the society be suspended and the secretary be instructed to cast the unanimous vote of the society for Dr. Fritz. Carried. A paper, "Neurasthenia," was then read by Dr. J. B. Cato of Hutsonville, and on motion the paper was received for discussion. This was followed by a paper on "Hysteria" by Dr. LeRoy Newlin of Robinson, which upon motion was also received for discussion. The papers were both excellent and were fully appreciated by the society. They were discussed together, the discussion being led by Dr. T. N. Rafferty, and many interesting and valuable points were brought out by the various members. A communication was read from the medico-legal committee of the state society inquiring as to the number of members in the local society who were carrying insurance against malpractice suits, and it was found that none of the members were carrying such insurance. There being no further business the meeting was adjuorned.

A. Lyman Lowe, Secretary.

JACKSON COUNTY.

The first quarterly meeting of the Jackson County Medical Society was held in the parlors of the New Hundley Hotel at Carbondale, March 17, 1910. Members present: Drs. Carter, Molz, Ormsby, Sabine and Grizzell of Murphysboro; Dr. Horsman of Vergennes; Drs. Etherton, Kessee and Mitchell of Carbondale; and Dr. Estel of Jacob. Visitors: Dr. Barrow of Carbondale and Dr. House of Desoto. The applications of Drs. Barrow of Carbondale and Dr. Wayman of Murphysboro were read and both gentlemen accepted as members of the society. The application of Dr. Daniel of Murphysboro was rejected.

Program:—An exceedingly well prepared paper read was by Dr. Jessie L. Myer of St. Louis on "Secondary Gastric Manifestations in Various Abdominal Disturbances." Discussion by Drs. Mitchell, Molz and Etherton. A very interesting paper on "Appendicitis," by Dr. H. G. Horsman of Vergennes, Ill.

Adjourned. Ray B. Essick, Secretary-Treasurer.

MACOUPIN COUNTY.

The Macoupin County Medical Society met in Carlinville, Jan. 26, 1910, for their first yearly meeting. Those present were Dr. Carl Black, Jacksonville; Dr. Patton, Springfield, and members, Drs. Gross, Hobson, King, Gillespie; Fisher, Collins, Matthews and Davis, Carlinville; Morgan, Nilwood; Riffey, Hill, Girard; Lockwood, Motley, Morgan, Virden. After calling to order the usual business was transacted. The resignation of Dr. Pattison, Benld, as secretary was accepted and Dr. Morgan, Virden, elected to fill the vacancy. Great regret was expressed by all members over losing Dr. Pattison, as he has made a most excellent secretary and friend. His going to Chicago to do post-graduate work, however, made it necessary for him to resign. We all hope we may see him in our midst again. An excellent address was given by Dr. Black, of Jacksonville. Dr. Patton of Springfield read a most excellent paper on the use and abuse of the curette. Dr. Hill of Girard read an excellent paper on "Burns and Their Treatment." A general discussion followed.

Adjourned.

T. W. Morgan, Secretary.

MORGAN COUNTY.

The society met at the usual time and place on February 11, Dr. Grace Dewey presiding. Doctors present: Black, Dewey, Milligan, Campbell, Reid, Crouch, Woltman, Weirich, Norris, Gillies, Pitner, Ogram, Elder, Hairgrove and Stacy. The pharmacists of the county were invited to meet with the society to discuss the United States Pharmacopeia and proposed changes. The following availed themselves of the invitation: Messrs. Shreve, Elder, Gilbert, Coover, Armstrong, Mendonsa, Keuchler, Galbraith, Buhrman, Obermeyer, Alcott, Shrewsbury and Brady. Drs. T. J. Pitner and David Reid spoke of the Pharmacopeia from the physician's standpoint, while Mr. Joseph Shreve, representing the pharmacists, presented a paper on "Changes and Additions to the U. S. P., from the Druggist's Point of View."

The discussion was quite free, and before it was finished had turned from a national affair to one purely local. It seems that as the situation now stands, particularly in Jacksonville, the U. S. P. is superfluous, neither the physicians nor the druggists having any need for it. The physicians have their own stock of medicines, made somewhere, while the druggists are busy prescribing over the counter, selling patent medicines and hair brushes. The Pharmaceutical Society of the county had an excellent display of U. S. P. and National Formulary preparations present for inspection. It is to be hoped that a lively interest in the use of the U. S. P. and the Formulary has been awakened, and that we will get together on this important proposition. The following committees were appointed: On Contagious Diseases, Drs. Adams, Hardesty and Milligan; on Public Health, Drs. Black, Reid and Woltman. The program committee was authorized by the society to issue a monthly bulletin for a period of three months. At the March meeting Dr. Charles E. Cole will read a paper on "Measles," and Dr. Allan M. King will consider the same disease from the standpoint of municipal control.

George Stacy, M.D., Secretary.

CHANGES AND ADDITIONS TO THE U. S. P. FROM THE DRUGGISTS' POINT OF VIEW.

Joseph F. Shreve.

Let us turn back the pages of pharmaceutical history for a moment to the year 1817, when the first active movement was made in the United States toward establishing our independence in the medical world, by ceasing to rely upon European pharmacopeias as authorities, and taking the initial steps toward the formation of a National Pharmacopeia, which after many preliminaries was published in 1820, and briefly consider the importance of this standard for medicinal preparations through the ninety years of its existence to the present time.

Being the standard, it is obviously the leader, the model, the mark to be attained by those employed in the preparation and application of medicines, as well as the official authority for the quality and strength of the various drugs and chemicals, with their preparations, doses and tests, and, as it has advanced from one revision to another, its importance has increased by additions, such as reagent, test solution, and volumetric solution requirements, assays to insure definite alkaloidal strength of preparations of potent drugs, and by its adoption by the federal law as a legal standard, so that we have a general uniformity of the great majority of medicines in use at the present time. How important it is then that an active interest be taken in revising the pharmacopeia and the method of the American Medical Association to stimulate an interest in this object is surely a very worthy one.

As the representative druggists of Morgan county we welcome this evening of pleasure and profit spent with you, and wish to assure you we fully appreciate the invitation kindly extended to us by the associate physicians of the county to meet with you.

When we think of the committee on revision as being composed of physicians and pharmacists who stand at the head of their professions, many of them being professors in some of our largest colleges, and then recall that we of one little county, busy with our affairs of every day life, are solicited to assist this committee, it shows us how much of an interest we should have in the pharmacopeia, and while we may not be able to make any suggestions which will be accepted by the committee, we can make an effort to do so. Merely glancing through the pharmacopeia is convincive of much thought, time and research being given to the work, and of the completeness and generally satisfactory arrangement regarding nomenclature, short concise descriptions, the retaining of articles in general use, omission of those no longer of sufficient importance to be retained and addition of the newer products, the practical working formulæ for the various preparations and the adoption of an uniform standard of strength, as with the fluidextracts, potent tinctures, dilute mineral acids and other preparations wherever possible.

As we turn the pages, however, a few thoughts suggestive of a better pharmacopeia present themselves. Acetphenetidin and sulphonmethane would roll off of the tongue or pencil much easier as pheny and sulphon, and hexamethylenamine, as hexy for short, would be fully recognized by the nickname. No doubt a contraction of the word, or even a coined word for the purpose, would be far better than the use of these long words, even if they should not indicate the chemical combination, and would be a distinct advantage in the nomenclature.

Sometimes it is the better policy to let well enough alone, especially when a fixed custom has established a name for an article and that name is not very far from being the right one. We have been accustomed to the name of catechu and the use of tincture of catechu for so long that should it come before us under the present name of gambir we would very likely have to look in the book.

The process for making the medicated waters is different in each of the three last revisions, and yet many druggists continue to make them in the same old way. Why? Because it is immaterial; they can be made just as well one way as the other. Then why make these changes? It has been suggested that a much better product is obtained by using olive oil instead of cotton seed oil in making camphor liniment, that it keeps better and has advantages medicinally. Also that the use of glycerin in compound syrup of hypophosphites will produce a far better and more stable product. Made in this way a better product than similar proprietary preparations is obtained.

The value of the pharmacopeia as a reference would be greatly increased if it would give the medical properties for each product it contains. This could be done without materially increasing the size of the book, and would be of great advantage to the physician, student and druggist as a quick reference for the principle medicinal action and dose. Just as it now gives the average dose, the medical property such as tonic, alterative, sedative, narcotic, could be given, like it now gives, i. e.—Ipecac: Average dose; expectorant, 1 grain; emetic, 15 grains.

Another suggestion: One of the preparations of the pharmacopeia in which the average druggist takes a great pride is the solution of citrate of magnesia, and, while opinions differ very widely regarding the method of its preparation, some preferring the use of heat, others the cold process, some using one form of magnesia and others using different forms, the official formula, if followed carefully, will produce a preparation which cannot be excelled. For the purpose of comparison, let us look at the method of preparation. Dissolve 33 grammes of citric acid in 120 cubic centimeters of water and having added 15 grammes of magnesium carbonate, stir until it is dissolved. Filter the solution into a strong bottle of the capacity of 360 cubic centimeters, containing 60 cubic centimeters of syrup of citric acid. Then add enough water to nearly fill the bottle, drop in 2½ grammes of potassium bicarbonate and immediately stopper the bottle securely.

If the above formula is followed, with the exception of using only one-half the amount of citric acid and 15 grammes of sodium carbonate, solution of citrate of soda will be obtained similar to sol. mag. cit. but quite different regarding medical properties. The pharmacopeia gives *no tests* for solution of citrate of magnesia and there should be, at least, an identity test given. When the ninth decennial revision of the United States Pharmacopeia is issued, if we find there has been some improvement along the lines of the discussion held here to-night, we will surely consider this a doubly profitable meeting.

UNION COUNTY.

RELIGION AND MEDICINE.*

Rev. Jas. R. E. Craighead, Anna, Ill.

In submitting this paper I shall not attempt to define the terms medicine and religion, but consider them in the popular sense in which they are universally accepted.

Simply stated, the physician's office is merely to aid Nature, and the true physician never aims to supplant Nature, but to get his patient in harmonious adjustment with her laws. Now the religion of the Bible teaches that the body is the temple of the spirit and should be cared for as such, but straightway after learning this we immediately forget it and begin to mar the temple. In depraved cases the passions and appetites are indulged, especially through drink and licentious living; more commonly, however, we err in overloading the stomach, keeping too late hours, working without sense or system, worrying over trifles and shutting ourselves away from the great health-giving forces of Nature—God's out-of-doors. Naturally our bodies rebel, and so the doctors have to take us in hand and make religion practical as it pertains to the keeping of our bodies. It is surprising (and no one knows this better than the physician) how much sickness is due to living out of harmony with Nature. In such cases, medicine's operation should coincide with the principles of common sense and religion—merely get the patient into harmony with health-giving forces and let God operate through Nature. Frequently this will mean not so much pill and fluid as the securing of a right attitude of mind in the patient. For this reason every doctor should be in as full a sense as possible a psychologist. It is because many physicians have failed to work along psychologic lines and have persisted in operating only through pill, powder and vial, that imposters have been able to juggle so successfully with psychical entities in the name of religion and medicine. Religion disclaims these fakers, just as medicine disclaims the quack, and yet both of us have to admit that results are sometimes secured by the religious faker and the medical quack which astonish the orthodox in both professions. It is only, however, as these methods and results stand the tests of truth and time that there is any permanent value to them.

It is comparatively easy to lead certain minds beyond their depths and confuse them and then exercise a kind of hypnotic influence over them through suggestion, and I am inclined to believe that many of these modern cures attributed to divine healing have been effected through a kind of hybrid species of practice, partially

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* A paper read before the Union County Medical Society in Benton Hall, Anna, Ill., Dec. 29, 1909.

religious, partially medicinal and partially suggestive. Both religion and medicine have suffered by this sort of thing. We must recognize, however, that a decidedly close relation exists between body and soul, and this may be affected by environment and suggestion. "One reason why the wild Indian is as cruel as the lion is because he has food that gives him the blood of the lion." A missionary among the Indians says that "by changing his style of food to correspond with theirs his temperament is entirely changed." Now it is the office of medicine to look after the body, while religion cares for the soul, but because of the ramifications of the one through the other neither can be slighted. The man of religion makes a mistake, often fatal, when he treats his body like so much old rubber, as if it were of no consequence. The man of medicine makes an equally egregious blunder when he minimizes the important part played by the religious feeling of his patients, or when he pooh-poohs religious instinct as so much mere sentiment. There is no gainsaying the fact that the religious instinct is deeply seated in all of us. It may be slaughtered after the manner of an abortion in the early stages of its development; it may be starved to death before attaining its maturity; it may be crushed and mangled by the ruthless treatment it receives from reckless agnostics or inconsistent professors of religion, and so grow up maimed and halt; nevertheless the religious instinct is deeply seated in all men and may be made to play an important part if rightly appealed to in the healing of sickness and disease. For this reason relations of cordial sympathy and perfect understanding should be maintained between the representatives of the ministerial and the medical professions. It sometimes happens that physicians habitually take every precaution to keep all religious impressions from their patients, forbiding anything like religious conversation and shutting the door of the sick chamber in the face of the minister, as though he were as unwelcome as death. And this, too, in spite of the fact that the soul of the patient is about to start on its long, last journey, and is craving a potion that the doctor cannot give out of his medicine case. He may give it, and often does give it, out of his heart's experience and a knowledge of the power of Christ to forgive and relieve. Every physician should be furnished with this equipment of true religion in order to supply the best service, for there are times when the shadows of death are gathering around the patient, and there is no time to send for a religious adviser; besides, no one is so well fitted as he himself, through the hold he has upon his patient's confidence, to speak the word which will be a message of life and hope unto the soul going out into the beyond. It is better still when a physician makes this a working part of all his professional duties, not merely in the final issue of his cases, when death is coming in for settlement, but in all his practice, making consistent religion to perform a telling part. Then does he stimulate confidence, cheerfulness and hope, which are incalculable aids to his profession.

VERMILION COUNTY.

The Vermilion County Medical Society met March 14, 1910, at St. Elizabeth's Hospital in Danville, with President Benjamin Gleeson in the chair. The board of censors was asked to report on the name of Dr. J. H. Williamson of Georgetown. One of the censors being absent, the president acted in his place, and Dr. Williamson was elected. The question, "'Is Dr. Bird of the Soldiers' Home Eligible to Membership in the V. C. M. S.?" arose again. It was decided that he is not eligible to membership owing to the fact that he does not hold a license issued by the Illinois State Board.

Dr. Glidden reported the progress being made in the arrangements for the state meeting, May 17-19. If the completeness in the arrangement is any indication of the success of the meeting, we cannot fail to have a powerful meeting. The committees are leaving not a stone unturned that will hamper the comfort of those who attend or that will mar the success of the undertaking. Everybody is working shoulder to shoulder in this direction. A communication from Dr. H. N. Moyer of Chicago, who is chairman of the Medicolegal Committee of the Illinois State Medical Society, was read. He wanted to know of those present at this meeting how many were "protected against malpractice suits by insurance

companies," and how many were not so protected. It was learned that six were so protected and thirteen were not so protected. It was moved and seconded that the florist's bill referred to in a previous meeting be paid, providing it is not proved to have been paid. The motion carried.

This was a clinical meeting and the subject for the evening was "Rheumatism and Its Sequelæ." The first paper was on "Rheumatism," by Dr. Robert Clements, Danville, Ill. The paper reflected much hard thought along the lines of etiology, the new theories being plainly brought out. The second was a ten-minute paper on "The Sequelæ of Rheumatism," by Dr. J. H. McIntosh of Danville, Ill. The author gave us more light on many points so easily overlooked by the casual observer. The papers were not discussed, owing to the fact that much time had been taken up with other important matters and that there were four patients in waiting to be exhibited.

The first case brought in was through the courtesy of Dr. H. S. Babcock. Mr. F., a German by descent and a painter by trade, gave a history of rheumatism for twenty years, now on a wheel chair. His history showed that he had spent much time in various resorts reputed to benefit patients with rheumatism, and with scores of physicians. He thinks every movable joint in his system has at some time been affected. At present there is ankylosis of right knee and edema of left knee which is partially ankylosed. There having been no specific tests made, the gentlemen present were undecided whether to class this as syphilitic or tubercular.

The second case was presented by Dr. J. N. Cloyd of Westville, Ill. John L., a Pole, aged sixteen years, but had the appearance of a lad of eleven years of age. History dates back twelve years, the knees being most affected, having at different times been aspirated. There being no specific history, and no specific tests made, the gentlemen were again up against conjecture and speculation. But the majority who examined the patient were of the opinion he is tubercular.

The third case was presented by Dr. G. L. Williamson. John, a Chinese cook, aged 38 years. This case was considered a syphilitic.

The fourth case was presented by Dr. O. H. Crist, Mr. T., aged about forty-eight years, a cab driver by trade, gave a history of rheumatism, having been afflicted for many years. It was a beautiful specimen of dilated heart, probably due to aortic stenosis. The case was well presented.

The gentlemen took a keen interest in all the cases presented, which demonstrated to those present that they were anxious to help the society along and raise the work to a higher plane. The meeting was an enthusiastic one from start to finish. After the cases had been presented, Sister Constance announced to the president that refreshments were ready to serve. The society then adjourned and went into the dining room, where all enjoyed the feast. A vote of thanks was extended to the Sisters for their hospitality. Number of members present, 21.

SOLOMON JONES, Secretary.

WABASH COUNTY.

The Wabash County Medical Society met in the Schneck Building, at Mount Carmel, at 3 p. m., Jan. 25, 1910. The vice-president, Dr. S. W. Schneck, presided. The minutes of the previous meeting were read and approved. Dr. R. J. McMurray of St. Francisville reported a case of cystitis with retention of urine in an old man. The lumen of the urethra was so obliterated that the smallest sound or catheter could not be introduced and it was necessary to aspirate the bladder above the pubes, but the patient died in a few days. Dr. M. G. Moore of Vincennes, Ind., was present by special invitation and read a paper on the subject, "When Not to Operate in Appendicitis." It was a carefully prepared and thoughtful discussion of the subject. The paper was discussed and commended by Drs. McMurray, Schneck and E. R. Lisher. "Influenza" was the subject for a general discussion opened by Dr. R. J. McMurray. Dr. S. C. Ramsey, who has lately come to us from Mt. Vernon, Ind., was present and made application for membership. The application was referred to a committee.

Adjourned.

J. B. MAXWELL, Secretary.

NEWS OF THE STATE

PERSONAL.

Dr. and Mrs. E. Fletcher Ingals have returned from the South.

Dr. Strother J. Beeson, Chicago, has returned from a trip around the world.

Dr. O. P. McNair, Batavia, is said to be contemplating removing to Oklahoma.

Dr. and Mrs. Mathias A. Seifert left March 15 for the Gulf Coast and Mexico.

Dr. Harry Lycan, Vermilion, was seriously injured in a runaway accident, March 12.

Dr. Leslie A. Beard, Polo, underwent an operation at Mercy Hospital, Chicago, February 15.

Dr. Joseph G. Kilgore, Vermilion, was reported critically ill with pneumonia last month.

Dr. Guy J. Wormley is reported to be seriously ill with pneumonia at his home in Sandwich.

Dr. Ralph M. Carter, Decatur, has been appointed house physician in the Hinton, W. Va., Hospital.

Dr. Henry Banga, Chicago, had a serious septic infection due to an operation wound, but is now improving.

Drs. Samuel A. and Samuel L. Oren, Lewistown, have been appointed local surgeons of the Burlington System.

Dr. Jacob Huber, Pana, has deeded to the local Grand Army Post five acres of land adjoining the city for a park.

Drs. Charles W. Hall and John H. Oliver have been appointed local surgeons at Kewanee for the Burlington System.

Dr. and Mrs. Vaclav H. Podstata, Elgin, and Dr. and Mrs. Thomas J. Watkins, Chicago, sailed for Europe, March 12.

Dr. Thomas C. Buxton, Decatur, coroner of Macon county, has been elected secretary of the Coroner's Association of Illinois.

Dr. Charles E. Crawford, Rockford, inspector of the State Board of Health, has gone to California for a rest of several weeks.

Dr. William A. Evans, health commissioner, Chicago, has received the degree LL.D. from his alma mater, Tulane University.

Dr. John W. D. Mays, Illiopolis, has been appointed physician of Sangamon county, vice Dr. Hamilton R. Riddle, Mechanicsburg.

Dr. William R. Patton, Charleston, is reported to be seriously ill in Washington Hospital, Los Angeles, with rheumatism and erysipelas.

Dr. Glenn Putnam has succeeded Dr. I. W. Howard as medical examiner in Aurora for the Burlington Voluntary Relief department.

Dr. Robert Schneider, of Berlin, has removed to Chicago. He is said to be especially interested in the treatment of poor tuberculosis patients.

Dr. Clyde C. Rayburn, Kewanee, who has been a patient in the Agnes Memorial Hospital, Denver, for nearly a year, reports great improvement.

A diamond-studded gold watch was given Dr. Theodore B. Sachs by the board of directors of the Winfield Sanatorium for Consumptives, February 22.

Dr. Camillo Volini and Dr. Antonio Lagorio, Chicago, have been decorated by King Victor Emmanuel III with the Cross of the Order of the Crown of Italy.

Dr. Daniel W. Rogers has been appointed chief sanitary officer and medical inspector of the Chicago division, Illinois National Guard, with rank of major.

The case of the State of Illinois against Dr. Jessie F. Buckley Ogden, Waukegan, charged with the murder of Mrs. Joseph Conner, by criminal operation, was dismissed by the state's attorney, March 14.

Dr. William A. Crooks, for eleven years assistant superintendent of Watertown State Hospital, was appointed superintendent by the State Board of Administration, March 21, vice Dr. Warren E. Taylor, resigned.

In the Sangamon County Circuit Court, on February 24, Dr. Harry C. Blankmeyer, Springfield, was found not guilty of malpractice in the suit brought against him by John Nolen, in which damages for $5,000 were claimed.

At the annual meeting of the Alton Medical Society, February 24, Dr. Thomas L. Foulds was elected president; Dr. James N. Pfeiffenberger, vice-president; Dr. J. Bernard Hastings, secretary, and Dr. Waldo Fisher, treasurer.

Mr. Elbert Clark, associate in anatomy in the University of Chicago and Rush Medical College, who has been appointed assistant professor of anatomy in the University of Manila, the Philippine Medical School, left Chicago March 19 to take up the duties of his new position.

NEWS ITEMS.

—Sarah A. Hartwell, Elgin, has given $4,000 to the Elgin Woman's Club to maintain a free bed in Sherman Hospital.

—Dr. Rosalie M. Ladova, Chicago, has returned from a six months' trip in the South and East, including a three months' stay in Washington, D. C.

—Dr. John A. Graham, 100 State street, Chicago, has been appointed head surgeon of the Chicago & Illinois Midland R. R., with headquarters at Chicago.

—The examination for internship in the Cook County Hospital and Cook County Institutions, Dunning, was taken March 9-11 by 140 men and women.

—It is announced that Harry M. Fischer, president of the Maimonides Kosher Association, Chicago, will erect a building for the institution to cost about $150,000.

—The case of Wilhelmina Hanson vs. Dr. Fletcher L. Crocker and Dr. Barratt, Pontiac, is said to have been decided in favor of the plaintiff in the sum of $6,000.

—The Young Women's Auxiliary of the Jewish Consumptive Relief Society netted $3,000 for the work in an entertainment given in Mount Sinai Temple, Chicago, March 13.

—At an informal gathering at the Elgin State Hospital, February 26, Dr. Vaclav H. Podstata, the retiring superintendent, was presented by the employees with an order for a library of medical books.

—It has been decided to increase the capacity of St. Margaret's Hospital, Spring Valley, by the erection of an additional wing. This will increase the capacity of the hospital more than 65 per cent.

—At the annual meeting of the medical staff of St. Anthony's Hospital, Rock Island, March 4, Dr. Joseph P. Comegys was elected president; Dr. Frank H. First, vice-president, and Dr. Emily Wright, secretary-treasurer.

—The directors of the Mack A. Montgomery Memorial Sanitarium, Charlestown, have elected officers and have plans for the institution under consideration. The stock has been subscribed and work will be initiated in a short time.

—At a banquet given by the Winnebago County Medical Society, at its meeting in Rockford, Dr. Daniel L. Connell, Beloit, Wis., president of the Rock County Medical Society, was the guest of honor. The subject of contract practice was fully discussed.

—The President has made the following Chicago appointments to membership of the endowment committee of the American Red Cross: Cyrus Hall McCormick, John V. Farwell, Edward B. Butler, W. G. Shedd, Charles G. Dawes and John J. Mitchell.

—Dr. Anna Dwyer, Chicago, proposes to erect a hospital for the treatment of contagious diseases of children, to be paid for by the money donated by the school children of the city, and suggests the erection of the building on land adjoining the Mary Thompson Hospital.

—Dr. Eugene Cohn, assistant superintendent of the Anna State Hospital for the Insane, was appointed assistant superintendent of the Peoria State Hospital by the State Board of Administration. Dr. Cohn will leave Anna for his new and wider field of activity in the near future.

—A vice commission of thirty to investigate and report on the social evil has been named by the mayor, Chicago, including criminologists, socialists, educators, jurists, lawyers, and the following physicians: Drs. William A. Evans, William Healy, Anna Dwyer, James Nevins Hyde, William L. Baum and Louis E. Schmidt.

—An accident with a hot-water bottle is said to be the cause for a suit for $25,000 damages filed in the Superior Court, March 22, by Mrs. D. B. Sweet against the Chicago Policlinic Hospital, the Henrotin Memorial Hospital, Dr. John H. Chew, president, and Miss Mary Stewart, suprintendent, of the Henrotin Hospital.

—The Chicago Hospital Day Association, chartered in February to promote systematic charity giving for the support of hospitals in Cook

county working under church patronage, will hold its first collections May 1 and 2. The hospitals of the Methodist, Roman Catholic, Baptist and Presbyterian denominations have taken out active membership.

—At an informal meeting of ten physicians of Quincy, held February 16, the organization of a physicians' club was considered. Dr. Thomas B. Knox acted as chairman and Carl W. Pfeiffer as secretary. Drs. Knox, John A. Koch, John K. Reticker and Kirk S. Shawgo were appointed a committee to present the matter to the physicians of the city and report at a subsequent meeting.

—Dr. Esther Hart of the South Bartonville Asylum was the heroine of an exciting time in that institution when an insane patient ran amuck flourishing a revolver. The "mere men" physicians took to cover, but Dr. Hart caught the patient and held her until she was disarmed. Dr. Zellar said: "Our policy is non-resistance and we got out of the way. The gun was loaded and the woman insane and frantic."

—Dr. J. Rex. Sholl, health commissioner of Peoria, has completed arrangements for a summer tuberculosis colony on the Galena Road, on a tract of land owned by Dr. George Zellar, superintendent of the Peoria State Hospital. On this tract a large tent is to be erected for kitchen, dining-room and administration headquarters, and small tents will be provided for patients. The colony will be opened about April 15.

—Dr. Harriet A. Hook has filed suit for $25,000 damages for false arrest and imprisonment against Ben M. Giroux, Policeman Gustave F. Bussian of the Town Hall station and former Lieutenant of Police Robert J. Schlau. A similar suit was filed against Mr. and Mrs. Giroux and Dr. D. A. Ryan. The suits grew out of Dr. Hook's arrest while investigating the condition of Giroux's son who was burned in the asylum at Lincoln by a hot radiator.

—A free bed for nurses afflicted with tuberculosis in the curable stages of the disease has recently been established at the Edward Sanatorium, Naperville, Ill., a department of the Chicago Tuberculosis Institute. This is in recognition of the valuable services of the nurses of Chicago who, as members of the Nurses' Auxiliary Committee of the institute, under the chairmanship of Mrs. Theodore B. Sachs, took a leading part in the sale of "Red Cross Christmas stamps," and it is from the proceeds of the stamp sale that the money to support the bed is appropriated.

A subcommittee of the Nurses' Auxiliary is composed of Mrs. Theodore B. Sachs, chairman, 1306 Independence Boulevard, for the West Side; Miss Lila Pickhardt, superintendent of nurses, Augustana Hospital, 2043 Cleveland Avenue, for the North Side; Miss Orthia Birdsall, superintendent of nurses, St. Luke's Hospital, 1439 Michigan Avenue, for the South Side.

—Judge Scovel of Chicago recently imposed a fine of $100 and costs on each of six persons who were convicted of practicing medicine without a license. Those fined are: Mrs. K. Henitz, 4746 South Ada street; M. L. Himmelbreich, 65 Randolph street; Lloyd C. Ayres, 26 East Van Buren street; Joseph Nasi, 509 Wells street; Maria Dolejs, 2121 West Madison street; George Kirsch, 6652 South Halsted street. None of the

defendants was in court. Attorney Charles Hoffman, representing the State Board of Health, explained to the court that all of them had agreed to accept the maximum fine.

—Chief Steward of Chicago has declared war on the distribution of free samples of headache medicines thrown on the doorsteps by agents. He has ordered policemen to gather the samples and prevent their further distribution. The order was issued, following a complaint made by Dr. J. W. McDowell, 3100 State street, who said the health and lives of school children were endangered through the presence of the headache powders which they might find and swallow in quantities sufficient to cause death. The physician sent several samples to Health Commissioner Evans. An analysis disclosed the presence of a deadly drug.

—Macfadden's "Healthatorium" is in bad with its pupils, who have started twelve suits to recover tuition fees amounting to $1,765. The students claim they were forced to eat improper food, to sleep twenty in a small room, and that they were not instructed according to agreement. A few of the things which Macfadden promises to teach in a year's course are anatomy, physiology, diet, first aid, hygiene, physical education, physical diagnosis, therapeutics, hydrotherapy, massage, anthropometry, gynecology, obstetrics, tumbling, mat work, boxing, wrestling, heavyweight lifting, basketball, football, baseball and dancing. It would not need much more to start a fake medical college which might appeal to some easy State Board of Health to recognize its degree of "D.F."

PUBLIC HEALTH.

—Dr. William Healey, medical director of the Psychopathic Institute, Chicago, advises the establishment of a school of psychiatry in connection with the Juvenile Court.

—Dr. J. A. Egan, in a recent report, noted the constant increase in deaths from cancer. According to his statistics, cancer causes one-twelfth of all deaths after the age of 30 years.

—Dr. S. Victor Balderston, Health Commissioner of Evanston, reported 11 cases of typhoid fever in Evanston early last month, a larger number than at any time in the past year.

—Students of the University of Chicago and Northwestern University, Evanston, have all been vaccinated, as the result of a special bulletin on the subject issued by Dr. Heman Spalding, Chief Medical Inspector.

—The report of the Council on Medical Education of the American Medical Association drew the fire of President Burrowes of Loyola University, who claims the report was made without recent investigation of the Illinois Medical College.

—Dr. A. H. Arp, health commissioner of Rock Island, is said to have sworn out a warrant for the arrest of Dr. C. H. Schultz for failing to report a case of diphtheria. Dr. J. J. Tremblay, called shortly before the child's death, refused to issue a death certificate. It is charged that Schultz is not a registered physician.

—It is proposed by the board of directors of the Chicago Lying-in Hospital to erect maternity hospitals on the South, North and West sides, to cost approximately $150,000. The site for the South Side institution has already been chosen, and the North Side institution may be located near the Children's Memorial Home.

—A number of Chicago physicians attended the opening of the United States Steel Corporation's new hospital at Gary last month. The hospital was designed by Dr. James Burry, chief surgeon of the company's western plants. Dr. Ira Miltmore, resident surgeon, will have charge with a large staff. The hospital will accommodate 125 patients. It is said to be the finest ever erected by any industrial company.

—The Chicago Pasteur Institution for the Preventive Treatment of Hydrophobia and the Study of Infectious Diseases, in its nineteenth annual report, announces that since its inauguration, 4,158 patients have received antihydrophobic treatment. Of these 1,538 came from Illinois, 659 from Ohio, 355 from Wisconsin, 224 from Iowa and 208 from Indiana. Only eight patients died, equivalent to a mortality of 1.9 per 1,000. Of the cases reported, 3,651 were bitten by dogs, 151 by cats, 134 by horses, 37 by skunks, 6 by wolves, 65 by cows, 14 by calves, 2 by burros, 7 by coyotes, 8 by mules, 9 by pigs, 2 by sheep, 14 by squirrels, 1 each by a rat and a monkey. Fifty-six were infected by hydrophobic human beings.

—Dr. Evans has been waging a valiant fight to keep the ordinance requiring pasteurization of all milk from cows not tuberculin tested from being repealed. Alderman Hey, of the Health Committee of the council, represents the opposition, and made an unfavorable report on pasteurization, proposing an ordinance requiring immediate tuberculin testing. At the council meeting, March 28, a resolution was adopted directing the mayor to appoint a commission of nine to investigate the question and report a plan for cooperation with the state commission. The health department issued an 8-page bulletin giving Dr. Evans' argument, which was backed up by quotations from the officials of the Bureau of Agriculture, of the Public Health and Marine-Hospital Service, and by leading scientists and philanthropists. At the council meeting a cablegram was received from Nathan Straus, at Gibraltar, protesting against the repeal. Part of the argument from the bulletin follows:

There will be no material relief for five years if the ordinance be amended as proposed and enforced. In that time the price of milk will have become adjusted around 15 cents a quart, and the small dealers will have found other things to do. The poor people will have become accustomed to using canned milk.

What will happen, instead of the above train of events, is that as soon as the amendment takes away one alternative, and the milk from untested cows is thrown out, an injunction will be asked. A temporary injunction will be granted and then a motion to make it permanent will be filed. In all probability the points made in that petition will be as follows:

1. The ordinance is invalid because it is unreasonable. It requires that its provisions shall be in full force and effect immediately upon the passage. In the present state of the public mind and with the present facilities, the 90,000 cows in several states could not be tested in months, and perhaps not in years.

2. It necessitates the destruction of $1,500,000 of property in cows in a summary fashion without a reasonable regard for the interests of those owning the cows.

3. It is against public policy, in that it deprives 23/30 of the consumers of their milk supply and in a way not necessary to conservation of the public health, since an adjustment along another alternative can safeguard the public health during the interim.

4. No city in the world of over 500,000 has ever deemed it wise or expedient to adopt such a measure.

5. No state or national government in this or any country has deemed it wise or expedient to adopt such a measure.

6. It is therefore improbable that it is a wise and reasonable exercise of police power.

We have already discussed what would be the result of the enforcement of the amended ordinance. Should the courts enjoin their enforcement, the consumers of milk would be without protection except in so far as they would be protected by the wisdom of good business policy on the part of dealers and a wise demand on the part of sellers.

To summarize:

1. The ordinance does not give us perfect milk, but it gives us the best milk which can be had at a price the poor man can pay.

2. The ordinance is right, according to the United States Government authorities and 90 per cent. of the physicians.

3. It has saved 700 babies in a year.

4. It has saved 70 deaths from typhoid fever in a year.

5. It has reduced the average bacterial count of milk from 5,547,502 to 944,465.

6. It has prevented any milk-epidemics of typhoid, scarlet fever or diphtheria.

7. None of the diseases which it was predicted would come as a result of the ordinances, has come.

8. The number of milk dealers has increased.

9. The proposed amendment is an experiment never attempted in any city of 300,000 or over in the world, nor has it been attempted in any state or county.

10. The best experts are of the opinion that it is not necessary.

11. Leading experts are of the opinion that 90,000 cows cannot be immediately tested in a state which is hostile to testing.

12. If the amendments could escape injunction, the price of milk would greatly increase.

13. The supply would not nearly meet the demand.

14. Large numbers of milk dealers would be put out of business.

15. The people would be protected against no milk-borne disease excepting tuberculosis; there would be the same milk-caused baby death rate, milk-borne scarlet fever, diphtheria and typhoid.

Here are fifteen succinct arguments against the experiment proposed. Can anybody answer one of these convincingly to a logical man? The experiment is proposed by a man with no experience in baby feeding, milk control, public administration, milk production, milk selling, disease control, pasteurizing or tuberculin testing.

The proposed amendment should be defeated.

NEW INCORPORATIONS.

American Journal of Clinical Medicine; capital $100. Printing and publishing; incorporators, H. E. Mowrey, C. Orgo and D. Martin.

The Kelso Sanitarium and Hospital Training School for Nurses, Bloomington; founding of training school for nurses; incorporators, George B. Kelso, Annie E. Kelso and Frank P. Boyd.

REMOVALS.

Dr. Curtis F. Powell has removed from Forreston to Lyndon.

Dr. Elsie Merrott has removed from Princeville to Nevada, Iowa.

Dr. Frederick Wach has removed from Dover to Collinston, Utah.

Dr. A. G. Servoss has removed from Havana to Merrifield, N. Dak.

Dr. Mary Brooks Baird has removed from Evanston to Eureka, Kan.

Herman Rothert, M.D., has removed from Petersburg to Memphis, Mo.

Dr. R. R. Campbell has removed from 100 State street, Chicago, to Pasadena, Cal.

Dr. Robert H. Rea has removed from 5656 West Lake street, Austin, to Hospital, Ill.

Dr. U. B. Williams has removed from 949 Greenwood street, Chicago, to Woodstock, Ill.

Dr. E. A. Davidson has removed from 1647 Carmen avenue, Chicago, to Kingsburg, Cal.

Dr. C. F. Burkhardt has returned from Covington, Ky., to his old address at Effingham.

Dr. William A. Walters has removed from 1811 Madison street, Chicago, to Billings, Mont.

Dr. John Gibbs Lovell has removed from 514 Eitel boulevard, Seattle, Wash., to Omark, Wash.

Dr. W. E. Nowers has removed from 1019 West Fifty-ninth street, Chicago, to Kenesaw, Neb.

Dr. C. E. Buckley has removed from 3249 North Ashland avenue, Chicago, to Cherryvale, Kan.

Dr. J. F. Johnson has removed from 4343 Elston avenue to 3141 North California street, Chicago.

Dr. Milo G. Sloo has removed from 1701 Jackson boulevard, Chicago, to 301 Commerce Building, Topeka, Kan.

Dr. William H. Connor has removed from 715 One Hundred and Twentieth street, Chicago, to Aurora, Minn.

Dr. Bertha Hamilton has removed from 6458 Stewart avenue, Chicago, to 1066 North Prairie street, Galesburg.

MARRIAGES.

William A. Lurie, M.D., Chicago, to Miss Mabel L. Mayer of New Orleans, March 9.

Daniel L. Hager, M.D., to Miss Mary Nicholas of Downers Grove, Ill., March 28, 1910.

Arthur Barnett Eustace, M.D., to Miss Florence Frances Mix, both of Chicago, Ill., Dec. 26, 1909.

DEATHS.

John M. Davis, M.D. Physio-Medical College of Ohio, Cincinnati, 1857; a veteran of the Mexican and Civil wars; died at his home near Staunton recently, from senile debility, aged 84.

Arthur Sinclair Kenaga, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; of Kankakee; died at the home of his father in that city, February 26, from uremia, aged 35.

William Gleason Stone, M.D. Bellevue Hospital Medical College, 1878; from 1883-1893 assistant superintendent of the Illinois Northern Hospital for the Insane, Elgin; died at his home in Montclair, N. J., Nov. 14, 1909, from tuberculosis, aged 52.

George Monro Darrach, M.D. Pennsylvania Medical College, Gettysburg, 1850; formerly of Cumberland, Ind.; one of the organizers of the Marion County Medical Society; died at the home of his son in East St. Louis, February 25, from influenza, aged 83.

Leroy S. Hopkins, M.D. Miami Medical College, Cincinnati, 1860 (license, years of practice, Ill., 1878); of Roanoke; for 65 years a practitioner of Illinois; a veteran of the Civil War; while fishing in Biloxi Bay, Miss., Feb. 24, 1910, was seized with apoplexy, fell overboard and was found dead, aged 71.

Lorenzo D. Jared, M.D. assistant surgeon of the Twenty-first Illinois Volunteer Infantry during the Civil War; for many years a practitioner of Whiteside county, Ill., and afterward a teacher and botanist of California; died in the Soldiers' Home Hospital, Los Angeles, Cal., Aug. 3, 1909, from valvular heart disease, aged 78.

Edgar B. Shumway, M.D. Rush Medical College, 1874; a member of the American Medical Association; a member of the legislature in 1882 and of the state senate in 1884; formerly local surgeon for the Illinois Central and Big Four systems at Peotone, Ill.; died at his home in Chicago, March 2, 1910, from cerebral hemorrhage, aged 58.

Don Lee Shaw, M.D. Rush Medical College, Chicago, 1891; formerly a member of the American Medical Association; a member of the Illinois State Medical Society; professor of surgery and director of the anatomical laboratory in the Chicago College of Medicine and Surgery; died in Kankakee, February 21, from general paresis, aged 43.

Alfred C. Godfrey, M.D. Rush Medical College, 1890; of Galena; a member of the American Medical Association; formerly a member of the faculty of the John A. Creighton Medical College, Omaha, and surgeon of the medical staff of the Presbyterian Hospital in that city; died at the home of his father in Galena, February 18, from tuberculosis, aged 41.

Homer Orman Bates, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; of Chicago; a member of the American Medical Association; formerly an instructor in Rush Medical College; professor of obstetrics in the Playfair Lying-In Hospital; attending physician at Grace Hospital; and a lecturer in the Presbyterian Hospital School for Nurses; surgeon for the Metropolitan Elevated Railroad; formerly president and councilor of the Long Beach Branch of the Los Angeles County Medical Society; died at his home in Sierra Madre, March 10, 1910, from cerebral hemorrhage, aged 63.

David M. McFall, M.D., of Mattoon, died March 6, 1910, aged 74 years. Dr. McFall had practiced for nearly half a century in Mattoon, and besides, was one of the public benefactors of that city. He was

active in founding the Memorial Hospital, to which he gave liberally during his lifetime, and it will be one of the chief beneficiaries of the large estate which he has left. He was active in the work of the Methodist Episcopal Church. Dr. McFall was born in Shelbyville, Ind., July 1, 1835. He graduated at Jefferson Medical College, Philadelphia, and practiced his profession at Cumberland, Ind., for four or five years, and came to Mattoon, Ill., on Oct. 8, 1862.

James Newton Matthews, M.D., born in Putnam county, Ind., May 27, 1852, died March 7, at Mason, Effingham county, Ill., buried March 10, 1910. This is the simple record of a man who lived a virtuous and noble life, esteemed by his confrères, loved by his patients, mourned by the entire community when his work was finished. For more than 30 years he was a typical country physician. The roads were never so bad, the nights so dark or cold or stormy as to prevent him from responding in person to the calls of his sick neighbors. He was skillful in the treatment of disease; kind and sympathetic to his patients; moderate in charge for his services, and as ready and as willing to answer the calls of the needy and destitute as of those more fortunate in circumstances. His professional life continued almost to the last. The final end of his work was a period of exacting and exhausting labor. It extended through an inclement night and far into the hours of the following day. The fatal illness came. A week of pain and suffering followed, and the toils and cares and burdens of life were laid aside forever.

At an early period of his manhood Dr. Matthews became a careful and critical reader of the best literature of the day. He was a frequent contributor to the daily and weekly newspapers, and his writings, especially of poetry, attracted much attention and displayed a rare gift and ability. A volume of his poems entitled "Tempe Vale" was published in 1888 and had a wide circulation among his friends and admirers.

He had no fear to meet his Maker, whom he had daily approached in prayer since the age of 12 years; no dread of death of which he himself had so beautifully written:

"It is a peaceful end of all desire.
An end of dreaming and an end of song—
A happy winding up of the vital fire;
A shadow lying on a broken lyre—
A landing place where weary pilgrims throng,
A tranquil terminus of ways that tire."

Memorial and decoration day services since their institution in his community have always been considered incomplete without an article from his pen and he seldom disappointed them.

The church in which the funeral services were held was entirely inadequate to accommodate the large crowd in attendance.

The Effingham County Physicians' and Dentists' Club passed appropriate resolutions and attended the funeral in a body.

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ORIGINAL ARTICLES

THE PROGNOSIS OF ANGINA PECTORIS.*

F. FORCHHEIMER, M.D.
CINCINNATI, OHIO.

The exercise of the art of prognosis is the most difficult function of the physician. Beside the personal equation of the physician and of the patient, which cannot be expressed in mathematical terms, every aspect of disease must be considered; its etiology, its pathologic physiology and anatomy, its symptomatology, its normal and abnormal course, its exact diagnosis and, finally, its treatment. Our medical forefathers paid more attention to prognosis than is done at the present time, partly because Hippocrates wrote three books upon the subject which were studied, commented upon and discussed for at least two thousand years as authorities; partly because this made it a highly important branch of medicine, and partly because there was much less known in medicine than at the present day. Certain it is that, while the older physicians were very accurate observers of symptoms, their mode of prognostication could hardly be considered worthy of emulation.

When we consider how difficult the prognosis is in angina pectoris, we are not astonished to find contradictory and insufficient statements made by our medical forefathers. My teacher, Alonzo Clark, says in his quaint way that angina pectoris "is pretty plainly a neuralgia," that "hysterical angina is very rare," and that "these neurotic anginas are nearly as dangerous as those of organic origin." Niemeyer (1874), whose book was so much read and admired in this country, states that "only those cases have any chance of cure in which the trouble is a pure neurosis without organic changes." Austin Flint (1873), who was an excellent observer, makes a more detailed statement. He says:

> The prognosis is always grave if physical signs show the existence of serious cardiac lesions; and sudden death is to be expected if there be much aortic regurgitation, or the habitual weakness of the heart render probable fatty degeneration or impaired nutrition of the organ.

* Read (by invitation) before the Chicago Medical Society, Feb. 23, 1910.

While this shows that Flint had looked deeply into the subject, study of the contemporaneous literature will prove that he was an exception, and that the general conception of the disease did not include the various causes of angina pectoris, and always considered it fatal.

The most distinguished exception to this attitude was William Stokes (1855), who first described angina pectoris in obesity of the heart and first proclaimed the fact that angina pectoris is not a disease, but a symptom. The latter is universally accepted now, the various causes of the syndrome are fairly well known, and any attempt to study the prognosis must consider these. For causation the following classification may be found useful:[1]

I. ORGANIC CAUSES. II. FUNCTIONAL CAUSES.

Under the first heading are found: 1. Disease in the coronary arteries, the aortic valve and the aorta itself. 2. Diseases of the myocardium. 3. Diseases of the pericardium. Under the second heading are found: 1. The toxic form. 2. The angioneurotic form, and, 3, the neurotic form. It is more than likely that, as our knowledge of the subject increases, other causes may be found which cannot be detected at present.

In order to study the subject I have collected the suitable cases seen by me in fourteen years in private practice, the number being 121. These "suitable cases" are such which I have been able to follow, or which are still under observation; all others have been disregarded. Both the advantages and disadvantages of selecting this material are evident. The principal advantage of studying private instead of hospital or dispensary patients lies in the fact that in every way they can be more easily followed up. Whoever has tried to keep dispensary or hospital patients under observation in a chronic disease will agree with me as to its difficulty. On the other hand, it is especially in private patients who belong to the better classes that, in chronic cases, the prognosis is more favorable than in the lower classes. But, for self-evident reasons, in the severe cases of angina pectoris this does not seem to be the case, while it holds good for the milder cases.

In common with all other observers, I find that angina pectoris is more common in the male than in the female, in the ratio of 63 to 48. This apparently differs materially from all other statistical statements, but is easily explained by the fact that we are now considering the presence of the syndrome in general. The youngest patient was 29 years old, the oldest 76. Romberg[2] states that coronary sclerosis occurs occasionally as early as the 24th year. The longest duration of the recurring syndrome was 17 years, the shortest in three who died in the first attack.

Consideration of the various forms of angina pectoris shows the following: In coronary sclerosis there were 56 cases in all; i. e., 29 cases without other appreciable changes in the heart and 27 with other changes. It is proper to state here what evidences I have considered as

1. Forchheimer, F.: Angina Pectoris, The Old Dominion Jour. of Med. and Surg., No. 6, December, 1909.
2. Lehrbuch d. Kkhtn. d. Herzens u. d. Blutgefasse.

pointing to coronary sclerosis. They are the existence of angina pectoris and certain changes in the aorta or the aortic valve. In the aorta we find evidence of sclerosis, sometimes dilation, which is now easily demonstrated by ortho-percussion and the orthodiagraph. Most frequently a soft aortic systolic bruit is detected, which sets in a little after systole, most commonly combined with an accentuation of the second aortic sound, especially characteristic when the blood pressure is low. Over the aortic area are found systolic bruits, differing much in character, sometimes soft, sometimes harsh, but as a rule unlike those of aortic sclerosis due to other causes. Moreover, the second aortic sound is accentuated, which is a fairly reliable differential sign between arteriosclerotic changes in the valve and the ordinary form of aortic stenosis. In one case of syphilitic endarteritis there existed angina pectoris of a very severe type, the physical evidence of a mitral lesion and of myocardiac insufficiency.

In the 27 mixed cases which were developed upon other diseases, the before-mentioned signs were present. The coexisting diseases were as follows: Chronic myocarditis in 12; mitral lesion in 6; aortic lesions in 4; obesity of the heart in 4; alcohol, diabetes, chronic nephritis, of each, 2; syphilis and cirrhosis of the liver, 1. Nearly all of these had evidences of arteriosclerosis.

In the cases of angina in which coronary sclerosis alone existed we find three dead in the first attack and seven others dead. Of the latter, two died of diabetic complications, one of complicating pneumonia in the status anginosus, death being due to acute cardiac dilatation, one of a cerebral and another of a gastric hemorrhage. So that, in all, in only six cases could death be attributed to the coronary sclerosis. The duration of the disease in these cases varied from 16 months to seventeen years, and all were males. Indeed, in the 29 cases of coronary sclerosis there is but one female, which corroborates the statements made by all the authors who have written upon the subject, approximating that of Osler, who has seen only one woman in 40 cases of angina pectoris. The reason for this apparent immunity in the female sex in this series of cases is readily found; the kind of material in which the women have very little cause to develop this form of disease. The prognosis of this form has been variously stated; from dubious, serious, grave, to "nearly always fatal" (Huchard). In general, it depends upon the following. The question of sex has already been referred to; that occupation is most favorable in which there is least physical and mental wear. The same may be said for the habits and the entourage. Excessive use of tobacco and alcohol should be especially considered. Syphilis makes for an unfavorable prognosis when it is inveterate. General or localized arteriosclerosis affects the prognosis more or less, as it interferes with other functional activity. Otherwise it does not influence the prognosis. Cases in which the onset is marked by a very severe attack, with or without cardiac asthma, present an unfavorable prognosis, especially when the attack is a prolonged one. Unfortunately, in this form, a mild beginning does not always signify a mild continuance.

As attacks are produced by constriction or obstruction of the coronary artery, or its branches, if there were any mode of determining the degree

of constriction, its character and its localization, much would be gained. When the obstruction is due to thrombosis or embolism, the attack is usually fatal, either immediately or later on, as the result of changes in the myocardium. The attack is always immediately fatal when one coronary artery is closed. This has been shown both by pathologic investigation as well as by animal experimentation (Porter). As a rule death occurs instantaneously where the descending or circumflex branches are completely closed, but occasionally the patient survives for a few days, as is shown by myocardial infarcts found post-mortem (Romberg). Incomplete obstruction may at first produce violent attacks, which are followed by severer attacks due to greater diminution in the lumen of the vessel, or this lumen may become wider and the attacks milder. Small obstruction is usually followed by mild attacks, which, according to changes in the mycocardium, either become milder or more frequent. Where there is arteriosclerosis of the aorta or aneurysmal dilatation with angina pectoris, the prognosis becomes unusually grave, although in three of my patients the duration of the disease was two years in one, three years in another, and in the third over four years. He is still comparatively comfortable and able to attend to his vocation. In the first one rupture of an aneurysm in the ascending portion of the aorta caused death; the other died in a severe attack of angina. In this form the changes in the myocardium due to coronary sclerosis are of the utmost importance for prognosis. My experience leads me to believe that when both cardiac asthma and angina pectoris are present from the onset, the outlook for improvement is very small. The strength of the heart, whether due to functional properties or to the presence of anatomic changes, is one of the predetermining factors in the prognosis.

But I cannot agree with Neubürger,[3] who states that in coronary sclerosis there are three stages of myocardial changes, which always develop and which are always fatal.

It has been frequently stated that when the blood pressure is high the prognosis is better than when it is low. From what has been mentioned this can be accepted. But it is not due to the fact that high blood pressure is more amenable to treatment, but because in pure coronary sclerosis low blood pressure usually signifies a weak myocardium. Moreover, high blood pressure may indicate serious complications and, as far as the duration of the disease is concerned, it usually implies increased work for the heart and early myocardial insufficiency. In twelve of the cases in which blood pressure could be studied it was normal in one case, low in seven and increased in four.

As far as the duration of the disease is concerned, my cases give little definite knowledge, as so many of them are still alive. Aside from those who died in the first attack, in eight the disease lasted from 1 to 2 years; in four from 2 to 4 years, and in one for 17 years. Of those alive, four have had the disease from 8 to 10 years, the same number from 5 to 8 years, and ten from 4 to 5 years.

3. Der Zusammenhang d. Stenose d. Koronar-arterien d. Herzens mit der Erkrankung seiner Muskulatur., Deutsch. med. Wchnschr., 1901, No. 24.

The proper treatment of these cases is a very important prognostic factor; by this I refer to the prevention of the attacks, the treatment during the attack and that in the interval which is both causal and symptomatic.

The question has been frequently answered whether these patients ever get well. Most commonly it is answered in an indefinite way; even Huchard admits that coronary sclerosis only is "nearly always fatal." The answer to the question depends upon our definition of what is meant by getting well. If complete removal of the cause is necessary to consider the patient well, it is more than likely that a very small number gets well, provided the diagnosis is made early and proper treatment is applied. If disappearance of attacks only is looked upon as a mark of recovery, the number is greater; again when recognized early and properly treated. But even then it is very small; certainly in my cases, as there are only three in which the attacks have ceased entirely, the minimum time being two years.

The mixed forms of coronary sclerosis are most conveniently discussed under the heading of myocardial affections, although in the case of valvular disease, which eventually leads to myocardial insufficiency, angina pectoris may be present as the dominant symptom, and in some forms no evidences of permanent myocardial insufficiency may be noticed. With this in view we now consider the diseases of the myocardium, the second of the organic causes.

The prognosis of angina pectoris in acute myocarditis, as we see it occasionally in diphtheria, gonorrhea and rheumatic fever, can hardly be estimated. It is probably the result of the same afferent nerve impulse, which accounts for its existence in all other forms, and, from a study of a subject which is still developing, it seems to me one is justified in concluding that angina *per se* does not lead to a fatal issue here. The cause which produces the angina and the damage produced by it are paramount in this form of disease in so far as prognosis is concerned.

In chronic myocarditis the conditions are as follows: In uncomplicated cases, of which there are twenty-two, with two deaths, the following may be noted: The attacks were mild or rudimentary in the majority of cases, i. e., in 18 and normal in 4 cases. In the latter class one patient, a brewer, may possibly be excluded, as the disease was only of 18 months' duration, and he died of pulmonary edema after great physical exertion. On the other hand, all physical evidences of coronary sclerosis were absent, yet coronary sclerosis may have existed. In the other cases with characteristic attacks, complete relief was given for the angina for from two to seven years; they are attending to their vocations and are comfortable. So that there are left three cases in which it would seem as if characteristic attacks of angina pectoris occur in chronic myocarditis. The symptom, then, in this disease presents a favorable prognosis. Indeed, it seems to be readily controlled by proper medication when there is no myocardial insufficiency of the first or even the second degree. On the other hand, when it appears with chronic myocardial insufficiency, it is quite serious, as there were two deaths in eight cases. With the setting in of severe symptoms of myocardial insufficiency the attacks of

angina pectoris became more violent, cardiac asthma developed in one instance, and the disease ran its fatal course in a comparatively short time. When there is marked coronary sclerosis combined with chronic myocarditis, the prognosis is still worse, two deaths in six cases. This is readily explained by considering the effects produced upon an already diseased myocardium, by interfering with its blood supply and the probability of degenerative changes in the heart muscle. It has been quite interesting to note the blood pressure in the cases just referred to. In most of the uncomplicated cases it was normal or low. In one case, a man aged 61 years, it did not even exceed 160. Where there was chronic myocardial insufficiency the blood pressure was also low; even the presence of a renal complication in one case did not raise the blood pressure, as usually occurs. In the few cases of coronary sclerosis in chronic myocarditis there was nothing which could be called characteristic. Before depending upon blood pressure as a diagnostic or prognostic sign, especially in those conditions that are produced by multiple lesions, it is necessary to consider all of these, as well as to determine how and where abnormal blood pressure may be produced. Even then a number of cases may be found in which it is impossible to determine why there is abnormal pressure; although the blood pressure may have been taken frequently and in varying conditions, postures and surroundings.

In valvular disease with failure of compensation, of which there are nine cases, the prognosis of angina pectoris is very difficult. The greater number of these was found in aortic insufficiency, because aortic insufficiency in and of itself leads to arteriosclerosis, as is stated by most modern authors. In these the attacks were more violent, as a rule, than in mitral disease.

There are many prognostic factors here which must be considered. The return of the attack, whether mild or severe, counts for much. The presence or absence of coronary sclerosis is of enormous importance. The condition of the myocardium is, probably, the most important factor for prognostication. In aortic valvular disease the condition of the aorta should also be carefully studied. When the myocardial insufficiency is in its earliest stages, the prognosis is better than when it is in its later states. When angina pectoris is present without coronary sclerosis the chances are best, and in the first instance it may disappear for years, to reappear as soon as the myocardium fails again or, as is not uncommonly the case, when arteriosclerosis develops. Certain it is that in chronic valvular disease we find both the mildest and the severest forms of angina pectoris.

In syphilis of the heart, as is stated for all syphilitic lesions of the heart, the prognosis is usually good, provided the nature of the disease is recognized and promptly as well as thoroughly treated. The one case in which there was angina pectoris was not an exception to this rule. In this instance the patient has been perfectly well of his angina for eight years, the mitral insufficiency which had developed about the same time still persisting.

There are twenty-two cases of obesity of the heart, of which six were males and sixteen females. This statement is altogether at variance with

the one which I made as the result of a larger statistical research published in 1888, comprising 122 cases,[4] of which 88 were males and 34 females. In this series, besides a large number collected from the literature, I included especially employees of breweries, in whom I found a satisfactory number of cases. In the present statement of cases, not only the material has been changed, but the fact that we are looking only to angina pectoris must be considered. In obesity or fatty overgrowth of the heart, angina pectoris is a very interesting subject, principally because the authors differ so widely in regard to its etiology and, therefore, as to prognosis as well. Two views are expressed, the one that it is due, principally, if not altogether, to coronary sclerosis; the other that it is produced by the condition of the heart. In the older series 51 cases are noted, whose post-mortem lesions might be productive of angina pectoris, i. e., 42 per cent. In the present series only six cases are found with coronary sclerosis, i. e., 23 per cent. The explanation of the different result is easily explained by considering the different ages of the patients in both series; in the older one 82 per cent. were over 40 years of age; in the present we have only 7 per cent. This evidence alone would tend to show that the angina pectoris in obesity of the heart can be produced, and is produced in the majority of cases, not by coronary sclerosis, but by ischemic conditions of the heart muscle. The prognosis of angina pectoris in this condition is made upon this basis; where there is coronary sclerosis it is the same as has been stated before. When coronary sclerosis is not present, prognosis depends principally upon the myocardium. When the mass of the heart is so great that it cannot be adequately supplied with blood when the patient is at rest, i. e., chronic myocardial insufficiency of the last degree, the prognosis is bad. While I have seen a patient die in this form of angina pectoris, this is not common; indeed, in this instance there was cardiac asthma.

In the great majority of these cases the attacks are diminutive; of the sixteen only two had characteristic violent attacks. Aside from the previous consideration and the age, the principal prognostic factor is proper treatment; out of the sixteen cases six were cured and ten were relieved. Among the ten not completely relieved we find those who could not or would not continue the treatment a sufficiently long time and three in whom the treatment could not be carried out because there were complications, as diabetes or asthma, which made it impossible. The two cases which were described *in extenso* in the article before referred to, lived for twenty and twenty-three years, respectively, entirely free from angina. I have seen several cases in which the patient was cured for a longer time. It would lengthen the discussion unnecessarily if I were to give the histories of all of them, but, on account of its unusual interest, I cannot refrain from giving an abstract of one. It is that of a woman who came under my observation twenty-four years ago. She was then 30 years old, in very good circumstances, weighed 290 pounds, and complained of cardiac symptoms, including angina pectoris, due to obesity of the heart and, what is much rarer, that after having borne one child eight years

4. Trans. Assn. of Am. Physicians, 1888, Vol. iii.

ago she was now sterile. After her weight was reduced nearly ninety pounds her cardiac symptoms appeared and she gave birth to a boy, who is now 20 years old. What with taking care of this boy, who was a neurotic offspring of a neurotic mother, and an unusual amount of exercise she did not gain in weight, but six years after the birth of her son she again came with the former complaints, again was reduced in weight, and after a more prolonged treatment again her symptoms disappeared, and she had another child who now is 14 years old. Shortly after this, as so frequently happens with us, her husband lost his fortune and she had not only to take full charge of her children, but had to turn to housekeeping, even doing menial work. Since that time she has not gained in weight, remaining stationary at 190 pounds, she is perfectly well, but she has had no more children.

The arteriosclerotic heart has been considered in connection with coronary sclerosis, and its prognosis depends, as in other forms of chronic myocardial involvement, largely upon the combined effects of the two conditions.

In interstitial nephritis and in diabetes mellitus the prognosis depends upon the same factors described in connection with coronary sclerosis, due allowance in the first disease should be made for the condition of the myocardium, the blood pressure being a good index in this disease and in diabetes for the general condition of the patient.

The anginal pains with oppression that occur in acute pericarditis are not dangerous. The same seems to be the case in obliterative pericarditis.

The functional anginas have been classified under the heading of the toxic, the vasomotor forms and neurotic angina. In the toxic form my experience has been practically limited to cases due to nicotine poisoning. They vary from the mildest type to the severest. I have seen a large number of these cases, 21 recorded, and in every instance the attacks ceased when tobacco was given up. With the light thrown upon the subject by experimental research on the effects of nicotine upon the coronary arteries, this seems strange, possibly explained in that the human heart reacts differently to nicotine than does that of the lower animals. This assumption is certainly warranted when we consider the differences that exist in the microscopic findings in men and in animals. But upon one thing we all can agree, viz.: that when nicotine poisoning is superimposed upon a coronary sclerosis, angina is rapidly made worse.

In vasomotor angina, as first described by Nothnagel,[5] we probably have an organic disease, in which the vasomotor symptoms result from arteriosclerosis. Indeed, Neusser[6] believes that all forms of angina pectoris are due to spasmodic contraction of the coronary blood vessels and goes so far as to state that when they get well it is due to rigidity of the diseased blood vessels. There is only one case of this form of angina in the list, and he had the characteristic evidences of coronary sclerosis as well. He has obtained great relief from treatment, but has been under obser-

5. Deutsch. Arch. f. klin. Med., iii, 309.
6. Ausgewählte Kapitel Klinischen Symptomatologie d. u. Diagnostik, Heft. 2, Wien, 1904.

vation for two years only, so that it would be injudicious to draw conclusions.

The neurotic form must be considered as being due either to neurasthenia, to hysteria or, as is frequently the case, to a combination of both. In neurasthenia, in which we also find peripheral angiospastic conditions, the prognosis is good *quoad vitam*, not always good, however, as to complete restoration to health. The duration may be short or it may last for years; indeed, it may never disappear. In the latter we have the clinical picture of a chronic neurasthenic who, in this instance, lives controlled by cardiophobia, the condition of his pulse and the fear of an attack of angina pectoris. But there is one other aspect which should not be disregarded. Neurasthenics not only are frequently arteriosclerotics, but they may develop arteriosclerosis on account of excessive wear and tear of blood vessels. So that patients in whom there already is angina pectoris become worse when neurasthenia develops, which is very common, and neurotic angina may finally lead to coronary angina. The latter occurred in one of my patients who has been under my observation for fifteen years. In the last three years all the evidences of coronary angina have developed. The attacks themselves may be rudimentary or fully developed. In another place (l. c.) I have recorded the case of a neurasthenic physician who had a characteristic attack of angina pectoris in the consultation room to which we had adjourned after seeing a patient with cardiac disease. Complete rest cured the doctor.

In hysterical angina pectoris we find rudimentary and normal attacks. I have seen a house epidemic of hysterical angina, following the death of the father of the family; every one of the hysterical children had angina. As it is six years since the occurrence took place, and all of them have had no recurrence, it must have been of psychogenous origin. It was very interesting to note that Kleefeld in 1824 recorded an epidemic in Danzig and Gélineau, one upon a ship at St. Helena in 1858.[7]

Patients do not die of hysterical angina, but the condition may recur and lead to the same results as in neurasthenic angina.

DISCUSSION ON THE PAPER OF DR. FREDERICK FORCHHEIMER

Dr. Frank Billings of Chicago:—We are fortunate in having one to discuss this imporant subject whose long experience, thorough methods of examination, profound consideration of all subjects and who brings to bear a sound judicial opinion upon all things with which he deals. I have known Dr. Forchheimer for about a quarter of a century and have always been impressed with the painstaking care and the great insight with which he views all subjects.

It is with some diffidence that I rise to discuss the subject which has been considered by this master. I believe that I can best meet the condition imposed upon me by giving in as brief a manner as possible some of my own experience upon this painful disease. In looking over my histories I find that during the past twelve years, which includes the time since we have been accustomed to use a tonometer, I have 90 records of patients who have suffered from unmistakable symptoms of angina pectoris. Of these, 11 were women and 79 men. The ages of the women averaged greater than that of the men and ranged from 54 years to 69; or, in other words, there were 4 in the fifth and 7 in the sixth decennium. Of the men

7. Friedreich: Virchow's Handbuch. d. Speziellen Pathologie u. Therapie. Vol. 1, u. p 326.

the youngest was 43 and the oldest 83. There were 10 in the fourth, 29 in the fifth, 34 in the sixth, 5 in the seventh and 1 in the eighth decennium.

As to related morbid conditions, all of the women suffered from recognizable myocarditis and arteriosclerosis and 5 showed chronic nephritis as evinced by albumin and casts. One woman suffered from glycosuria of a chronic form. One woman suffered from dilatation of the transverse arch of the aorta. Of the 79 men, 68 showed evidences of myocarditis; 64 arteriosclerosis and 42 of chronic nephritis. Four suffered from glycosuria. Dilatation of the transverse arch of the aorta was manifested in 5 of the men; aneurism in 2; a small aneurism of the left coronary artery existed in 1; left coronary thrombosis occurred in 4 and one patient suffered from chronic acetanilid poisoning as a related cause.

Of the 79 men 13 are known to be living, 23 are known to be dead, and the remainder have been lost sight of. Of the 11 women 6 are known to be dead and 5 are known to be living. Of the living the duration of the disease varies from 4 years to 15. One man of 68 years whose first symptoms were manifested in 1896, still is living with much less severe attacks than he had ten years ago. Of the dead, 1 man suffered for 14 years; another for 12 and others for lesser periods. The mode of death in 9 was sudden, almost instantaneous; 3 died while asleep; 1 died at the end of 48 hours from the beginning of the first attack of a severe angina coincident with a thrombosis of the left coronary artery which resulted in softening of the walls of the left ventricle; 5 died with broken heart compensation and general anasarca, the angina disappearing after broken heart compensation occurred. One man, aged 69 years, who had suffered with severe attacks for 5 years off and on, became so improved by treatment at Nauheim that he passed through a severe pneumonia without the heart giving way. Blood pressure was studied in the great majority of the patients. The highest was that of a man who suffered from syphilitic arteriosclerosis and myocarditis and interstitial nephritis and at its greatest height was 270 mm. Another patient suffering from chronic Bright's with a blood pressure of 240, when under the treatment of a quack who had him on starvation treatment anginal symptoms developed with a blood pressure of 190 mm. On the average the women had higher blood pressure than the men. The lowest in any woman examined was 160 mm. and the highest 175 mm. The lowest pressure of the men was 60 to 70 mm. and the highest, as stated, was 270 mm.; the average ranging between 120 and 185. As noticed by practically all observers there seemed to be two types of patients as far as the arterial conditions were concerned. That is, those with cardiovascular changes usually had a nephritis and a rather high arterial tension, and the other class less numerous with cardiac changes with less apparent involvement of the arterial system; usually none of the kidneys and with a pressure ranging from 100 to 120. It was also noticed that in those with relatively high arterial tension, there occurred cycles in which the arterial tension was raised from 12 to 24 hours preceding the anginal attack. When this rise of arterial tension occurred there was in some no subjective preliminary manifestation of the attack.

One also could divide the patients into two classes of the major and minor forms. The major forms were those in which the attacks were very severe associated with the characteristic constricted feeling of the chest, poststernal pain of a severe type, pain radiating into the neck, into the shoulders, arms and sometimes to the wrists associated with a sense of impending evil; the patient involuntarily standing like a statue breathing superficially, the skin pale, the face and hands often covered with a cold sweat and the pulse small, tense, rapid and sometimes irregular. In these attacks patients sometimes died suddenly.

The minor attacks usually occurred with a sense of fulness and weight in the epigastrium which extended to the poststernal region sometimes amounting to pain but usually to a sense of oppression with air hunger. The patients usually ascribed this to indigestion; often would take remedies to cause eructations of gas and be improved for the time. These attacks, too, usually would come on after a hearty meal with exercise after it and were naturally ascribed to indigestion. In others the minor attack would be manifested by a pain somewhere else; in two,

a mother and a son, in a tooth; in another patient in the left wrist and in another by pain in the suprasternal notch; in another by pain in the epigastrium. But in all of these minor cases sooner or later, as observed, the symptoms grew worse and finally became established as an ordinary attack of angina pectoris. As to the prognosis I confess there has appeared to me to be no palpable condition which I could grasp which would enable me to say that this patient would live for a long period of time or that that one would suddenly die. I have felt that in those patients in whom the breast pang would come when the patient was quiet; that is, sitting or even lying in bed in the night, were more likely to die suddenly than those whose attacks were brought on by either physical or emotional disturbances. As a rule the duration of life in the women has been better than that of the men. The prognosis may also be based partly on the management. If one may thoroughly command a patient and especially if he will follow a proper hygiene as to diet, graduated exercise, rest, etc., he will improve. The treatment at Nauheim by baths and the resistance movements has benefited the most of the patients I have sent there. So, too, have the Nauheim resistance movements when carried on at home in a proper way been of benefit. I think there can be no question that the toxic effect of tobacco when smoked very much increases the risk of the anginal attacks and, therefore, makes a poor prognosis. In some instances I have known the anginal attacks to disappear entirely on the cessation of the use of tobacco. Alcohol in moderation has not appeared to be as harmful, and indeed, when there is a tendency to vascular spasm, alcohol is a good remedy. The diet must, of course, be suited to each individual but as a rule should consist of a minimum amount of animal food with greater freedom in the use of vegetables, fruits, cereals, etc. Fat-making food should be cut to a minimum. With a high arterial tension coffee and tea should be omitted. The amount of fluid also should be regulated to meet the anatomic condition of the heart, vascular system and kidneys.

With the Wassermann test or the modification of it as made by Noguchi, much good, I believe, may be secured after a positive test by the use of mercury followed by the iodids in doses to suit the individual. In other patients I never have secured the benefit from the iodids as others have done as indicated by the literature. In other patients who suffer from cardiovascular spasm the nitrites are of undoubted value. Nitroglycerin is very evanescent in its effect but harmless and, therefore, may be pushed freely. Nitrite of soda is more lasting in its effect, but as its effects are sometimes toxic it should be used with caution. Tetranitrate of erythrol in the dose of 1/8 to 1/2 grain every four hours has a more lasting effect than nitroglycerin and also is harmless. In those patients who have a low blood pressure and with little or no apparent cardiovascular spasm, the nitrites are of no value whatever during the attack. Where absolute quiet will not afford relief a small dose of morphina sulphas (1/8 to 1/4 grain) should be given hypodermatically.

A patient in an attack should be allowed to assume the position which he desires. This is never one of recumbency. To force a patient to lie down during an attack is dangerous.

CHRONIC COLITIS.*

GEORGE D. KAHLO, M.D.
FRENCH LICK, IND.

This paper is a clinical study of 600 cases of chronic colitis treated at French Lick Springs. These include cases of both *colica mucosa* and intestinal catarrh, in many instances the two conditions coexisting. Excluded are gastroenteritis, enterocolitis and all other conditions in which the colonic involvement seemed of second importance, as also the acute forms.

* Read (by invitation) before the Chicago Medical Society, Feb. 9, 1910.

Of the total number of cases reported, 48.9 per cent. were males and 51.1 per cent. females. Forty-one cases were under 20 years of age, the youngest 3; 52 were over 50, the oldest 78. The greatest number were between the ages of 30 and 40. The duration of the disease has varied from three months to twenty years, usually from two to six years. In 86 per cent. the symptoms first observed were those of a disturbance of digestive function. In some it was attributed to the stomach, more often to the intestinal tract, particularly the colon. Fifty-one per cent. gave a history of constipation, about two-thirds of which were of the spastic variety. In 15 per cent. constipation alternated with diarrhea, and in 27.2 per cent. diarrhea was present more or less constantly, the number of stools varying as a rule from two to five daily.

Mucus was present in all cases in appreciable amounts. In 36 per cent. it existed in the forms of casts or tenacious inspissated shreds, showing evidences of pressure and retention. In the remainder, it was found in the form of small flakes more or less mixed with the fecal deposit, or in gelatinous-like masses sometimes passed alone.

Colic was a prominent feature. In only 17 per cent. was this symptom apparently entirely absent. In 33 per cent. it was described as slight or moderate in degree and in the remainder as at times severe. A large majority of the cases showed evidences of distinct neurotic tendencies, sometimes of the most manifold nature, and autotoxic symptoms were exceedingly common.

Physical examination showed gastroptosis in 12 per cent. of the cases and enteroptosis in 23 per cent. The right kidney was palpable in 74 cases, the left alone in 9, and both kidneys in 24. Tenderness over the course of some portion of the colon was present in about 90 per cent. of the cases. Most commonly it was over the sigmoid flexure. Next in point of frequency was the *cecum* and then the transverse colon. Very often it included both the ascending and descending colon, and in about 15 per cent. it was quite general. Urinalyses showed indican in excess in 34 per cent. and urates in 27 per cent. Oxyluria was present in 19 per cent. and phosphaturia in 23.

Among the other symptoms observed general abdominal discomfort, gastric distention, eructations, burning, regurgitation, coated tongue and a bad taste were common symptoms; nausea less so. Cardiac palpitation, arrhythmia, intermittence of the pulse and precordial distress were often a source of much anxiety to the patient, as were also vertigo and unusual fatigue. Insomnia, migraine and general neuralgic pains still further added to their discomfort. Mental depression of some degree was a very constant feature, in some instances amounting almost to hypochondriasis. Many of these phenomena, I believe, were the result of autointoxication, as they usually disappeared or were much mitigated as soon as the disturbance of digestion was relieved. Of the influences that have appeared to act in an etiologic relation to the symptoms present, those which would be calculated to cause nervous and mental depression were decidedly more frequent than those which might act as mechanical or chemical irritants to the mucosa.

The diagnosis in typical cases of colitis is not difficult, although mistakes are common, and its significance is often overlooked, even when its existence is recognized. Many of these cases have come with a diagnosis of appendicitis or gall-stones, some of them postoperative, yet the symptoms present were the same as those which had existed from the beginning of the illness. I am confident that operations of this kind would be undertaken much less frequently if every case of colitis were properly treated from its incipiency, and that the results of these operations, where indicated, would be far better if more attention were given to the after-treatment of the colon.

Fecal examinations are an important part in the investigation of these cases, and in those reported such examinations have been the rule. Most frequently, they have been macroscopic only, but in a considerable number microscopic and chemical as well. Specimens are usually not hard to obtain, nor is it necessary always to employ a test diet or to continue the investigation over a prolonged period. What we most want to know is how the digestive function is being performed with the patient's ordinary diet, and with a little experience, fairly accurate conclusions may be drawn in this way. A very cursory inspection will suffice to determine the existence of mucus, its character and amount, the color and consistency of the stools, presence of intestinal sand, blood, worms and the grosser evidences of undigested food products. To form an accurate opinion of the digestive function, however, a microscopic examination should also be made, and in many cases it is desirable to employ a test diet, such as has been recommended by Schmidt. While attaching much importance to the results of examinations of this kind, I would also emphasize the point that the results, to be of practical value, must, as in all laboratory investigations, be considered in connection with the clinical history and physical signs. The most important thing to be searched for is the presence of mucus, which, if it exists in appreciable amount, is always abnormal and points either to an inflammatory or neurotic disturbance, very frequently, I believe, to both.

Among the various conditions complicating colitis, gastric disorders are decidedly the most common. In only 18 per cent. of the cases was there an absence of such symptoms, although generally they were comparatively slight. Gastritis was present in 13.3 per cent. and hyperchlorhydria in 24.1 per cent. Fourteen of these cases showed achylia gastrica. In many of the remaining cases no particular abnormality was apparent. Appendicitis was, or had been, present in 68 cases; in 24 it was postoperative. Symptoms of cholelithiasis existed in 32 cases, 7 of which had been operated on. Gouty manifestations were of very frequent occurrence, usually of atypical form. Cutaneous eruptions, such as eczema, urticaria, acne, psoriasis were comparatively common also.

It is difficult to outline briefly a treatment for so protean an affection as colitis, especially when we consider its various forms. Whether we take the view that the indications are to be sought solely from the side of the neurosis or that we should take some cognizance of the digestive symptoms, more than to stimulate intestinal peristalsis, one thing is

certain, and that is that we will not succeed by medication alone. I do not hesitate even to say that on the whole medicines are likely to do more harm than good. Here, as in other diseases, the important thing is a recognition of the influences that have caused it. If the case is brought to us at a time when the only evidences of the trouble are the presence of mucus and pain, plus certain neurotic disturbances, common to other functional neuroses, the treatment would not differ materially from that which would be applicable to neurasthenia without special intestinal involvement. Ordinary hygienic measures, such as fresh air, exercise, rest, baths, etc., are always applicable and if, as is generally the case, the nutrition is below par, we must see that the diet is sufficient in quantity to meet these requirements.

There is no scheme of diet that is applicable to all cases. If we can exclude any catarrhal condition, a course regimen, rich in cellulose, such as is recommended by von Noorden, will often succeed admirably, but the change should be made gradually and not abruptly. If pain is a prominent feature, if there is much tenderness over any part of the colon, great distention or marked evidences of undigested starch granules in the stools, it will only aggravate these symptoms. The best diet in the beginning is usually one that is easily digested and leaves a small residue. It may not relieve the constipation, but it will lessen the patient's discomfort. As improvement is observed in the secretory and sensory disturbances we can, by a diminution of proteids and the substitution of fats and carbohydrates, promote a better motor function. If diarrhea is present, only the blandest articles of food should be permitted.

In dealing with constipation, diarrhea and other attendant local phenomena, I believe that the milder mineral waters of the alkaline-saline group are among our most useful remedies. This opinion I have often heard expressed by physicians practicing in Carlsbad, Kissingen, Homburg and other European resorts where the waters are of this type. I have used the French Lick waters in all of the cases here reported, but I have not prescribed it in large quantities, nor have I relied wholly upon its internal use. The greatest benefit to be derived from its use is in its influence upon secretion. The management of all these cases requires the most careful supervision, and only the mildest course of the water is usually advisable in the beginning of the treatment. Very often, too, I have used in conjunction with this treatment warm olive oil enemata, taken at night.

Tonic baths, conjoined with local and general massage, have been largely used, both for their effect upon the circulation and for the relief of intestinal atony. Warm fomentations over the abdomen are very grateful if there is much pain or tenderness. The indications for abdominal massage are much the same as for the coarser forms of diet. Exercises, particularly such as bring into use the abdominal muscles, are most beneficial in promoting peristalsis. The greater the diversion and interest they afford, the better will be the results obtained. There are few conditions in which the psychical element enters more largely into causation than colica mucosa, and we are justified, I think, in availing

ourselves of the same influence in treatment. Optimism on the part of the physician and his ability to obtain the confidence of the patient count for much in the relief of mental depression, a common feature of these cases, and like influences are to be obtained from change of scene and cheerful surroundings.

The prognosis is, I believe, favorable in most cases, although improvement is often tedious.

FIBROMA UTERI (DESCRIPTION, BEHAVIOR, SYMPTOMS AND TREATMENT) IN THE NON-PREGNANT AND PREGNANT.

A. Belcham Keyes, M.D.

Assistant Professor of Gynecology, Rush Medical College; Professor of Gynecology, Chicago Policlinic; Gynecologist to The Presbyterian and Policlinic Hospitals and Surgeon to Cook County Hospital

CHICAGO.

The fibroma, fibroid, fibro-leio-myoma, or fibro-myoma of the uterus is a homologous, benign tumor of fibrous and smooth uterine muscle tissue, in varying proportions (somewhat like that of the normal uterine wall), in which the fibrous tissue usually predominates. Besides the fact that over 3 per cent. of the few fibromata examined microscopically have undergone sarcomatous degeneration and that carcinoma may occasionally develop from the inclusion of uterine glands within the fibroma, though it does not originate from it, there is also always the possibility of incarceration in the pelvis or if rising into the abdomen the attainment of very large size markedly interfering with nutrition, to say nothing of the pain, loss of rest and general interference with health, and the anemia from hemorrhage and infection, e. g., in the submucous variety. Also the possible nephritis and heart changes, the sterility, or, in case of pregnancy, the possibility of early abortion, or rapid growth of the tumor if pregnancy continues, as well as the liability to premature separation of the placenta during labor, prolongation of labor, temporary or permanent obstruction to labor, adherent placenta, postpartum hemorrhage, and infection deserve our most serious consideration.

In negresses and mulattos fibromata are often to be found at an early age and are considered by some authors as common in the dark races, in contradistinction to ovarian tumors and carcinomata which are said to be comparatively rare. In 11,203 white women examined for pelvic disease, fibromata were discovered in 4.3 per cent. (Moeller), and even higher percentages have been given by other authors. The date of the first beginning of a fibroma is nearly always obscure, as it at first often causes no symptoms, either in the non-pregnant or pregnant, till of a sufficient size, varying in different individuals. In the submucous variety small fibromata may cause only an increase in the monthly flow.

At autopsies fibromata are often accidental finds, having caused no symptoms in life. While Bayle estimated that 20 per cent. of all women autopsied at 32, and Klob that 40 per cent. of those autopsied at 50

years of age, have fibromata of the uterus, yet clinically only 1 per cent. of fibromata occur between 20 and 30, 28 per cent. between 30 and 40, and 51 per cent. between 40 and 50 years of age.

Etiology.—The fact that fibromata apparently only occur after puberty, and occasionally atrophy after the menopause, is suggestive of some close relation to ovulation and the child-bearing function of the uterus, especially the latter in which the pregnant uterus undergoes diffuse hypertrophy and hyperplasia in the first half of pregnancy, both intra-uterine, as well as (if to a less degree) extra-uterine. Fibromata might from their formation be considered as an atypic localized hyperplasia of the uterine wall, the exciting cause of which is unknown. Again, they are most frequent in the second half (thirtieth to forty-fifth year) of the reproductive period. Another peculiarity is that fibromata that were known to be present during pregnancy have in rare instances apparently disappeared after labor, presumably undergoing a process like postpartum involution. One such case was seen by the writer in a nullipara aged 35 years. The diagnosis was confirmed by laparotomy, but pregnancy being found to exist the tumor was allowed (for fear of causing abortion, it being the ardent desire of the woman to bear a child) to remain, the pregnancy continued to term and after involution could no longer be palpated per vagina. Lastly, clinical observation supports the belief that fibromata probably do not originate after and may grow slower or occasionally even cease growth, and in some cases even atrophy, at the termination of the reproductive period, i. e., at the climacteric or menopause. The simultaneous occurrence of fibroma and certain diseases of the ovary has been frequently observed and reported (Hegar). Ovarian irritation may cause an increased blood supply to the uterus and a probable increase in the size of fibromata.

Gottschalk described the intimate connection of fibromata with the uterine wall arterioles. Congestions probably favor the development of fibromata (Oleshausen), e. g., dependent congestion from constant sitting, congestions of ovulation, menstruation, coitus and pregnancy, congestion due to acute, subacute or chronic inflammatory excitants, e. g., endometritis, or peri- and para-metritis with secondary metritis. Clinically Oleshausen's idea appears to be well supported for fibroma patients are often well-nourished people of sedentary habits in which one would expect a very rich pelvic blood supply; yet this cannot be rightly considered more than a predisposing factor, the real cause, as in carcinoma, being unknown. The theory of Cohnheim is as prominent to-day as at its conception, despite the attempts to find a bacteriologic factor.

Fibromata were found in 515 private cases, while in the doubly large polyclinic practice only 283 (Schroeder). Engstrom found, in the virgin one, to four in the non-virginal, and Schroeder estimated the married fibroma patients at 78 per cent. and the unmarried at 22 per cent., and Fehling two married to every one unmarried.

Prolificacy appears usual in fibromata patients; 70 per cent. had borne children before the development of the tumor or at least before the diagnosis, the average being 3.2 children for each. Only 24 per cent. of the

married, mostly among the well-to-do patients, were sterile; doubtless their knowledge how to prevent conception or to cause early abortion played a part. This is not a large increase, considering that 8 to 15 per cent. of all married women are sterile anyway (Doederlein), or at least do not become pregnant, due to sterility of the male sex.

Macroscopically fibromata of the uterine corpus wall are usually multiple and show somewhat the same structure whether they be minute or large, and are often lobed and very irregular shaped and circumscribed more often than diffuse. The cut surface is white and hard if composed mostly of connective tissue, redder and softer if smooth muscle fiber is large in amount, or softer and whiter or whitish yellow locally or diffusely in some cases of degeneration.

Microscopically the fibroma consists of smooth muscle fibers and connective tissue irregularly arranged, often wavy and so close as to appear entirely fibrous, while in others the connective tissue may be looser, or in the so-called myomata the muscle fibers may predominate.

Fibromata are often divided from the healthy uterine wall musculature by a capsule of loose connective tissue out of which they can be easily shelled. Comparatively few small blood-vessels, as a rule, enter the tumor with the connective tissue trabeculæ. In other cases the fibroma, as well as the surrounding uterine wall, may contain cavernous (gravid uterus-sinus-like) spaces. About 91 per cent. of fibromata occur in the wall of the corpus uteri (especially on the posterior wall near the fundus) and only about 9 per cent. in the cervix uteri.

The Behavior of the Corpus Fibroma.—The corpus uteri fibromata are generally conceded to occur clinically most often within the tissues of the wall of the uterus, i. e., intramural or interstitial probably in about 65 per cent. of the cases, being at first only of very minute dimensions. As fibromata enlarge they may develop toward the peritoneum and gradually become subserous (24.3 per cent.) or they may develop toward the mucosa and become submucous (10.7 per cent.) (Winckel). Just what decides the position or direction of development is difficult to say. The site of origin being either near or actually under the peritoneum or near to or actually under the mucosa may be the deciding factor, or possibly development in the direction of least resistance. So long as the tumor remains surrounded by some normal uterine muscle, no matter how near it is to the peritoneum or how near to the mucosa, it is still technically intramural, though clinically one designates them as subperitoneal or submucous. Frequently fibromata are multiple, and all three types are represented in the uterine corpus, even though the whole tumor be small, but especially if the tumor is of large size, though occasionally there may be but one fibroma focus in a very large tumor.

1. The intramural or interstitial corpus fibromata in the non-pregnant uterus may remain intramural, i. e., entirely surrounded with a layer of normal uterine musculature and grow to large size before they extend beyond their intramural bed. They are usually more vascular than either the subserous or the submucous, and perhaps in consequence usually grow somewhat more rapidly. One occasionally finds in them

large venous-sinus-like hempseed to pea-size spaces (fibroma cavernosum of Virchow) often confined to a part of the tumor only, giving rise to a bruit synchronous with the woman's heart, simulating the so-called placental soufflé of an advanced pregnancy. Cavernous fibromata may increase or decrease in size more or less rapidly according to the increase or decrease of the blood supply, probably also influenced by uterine muscular contraction. Hyperplasia rather than hypertrophy seems to be characteristic of the intramural tumor. Intramural tumor foci are usually multiple and usually present a lobed and very irregular or uneven tumor surface and may remain and become incarcerated in the pelvis or rise into the abdominal cavity. In a few cases there may be but one fibroma or, indeed, several intramural fibromata which may enlarge

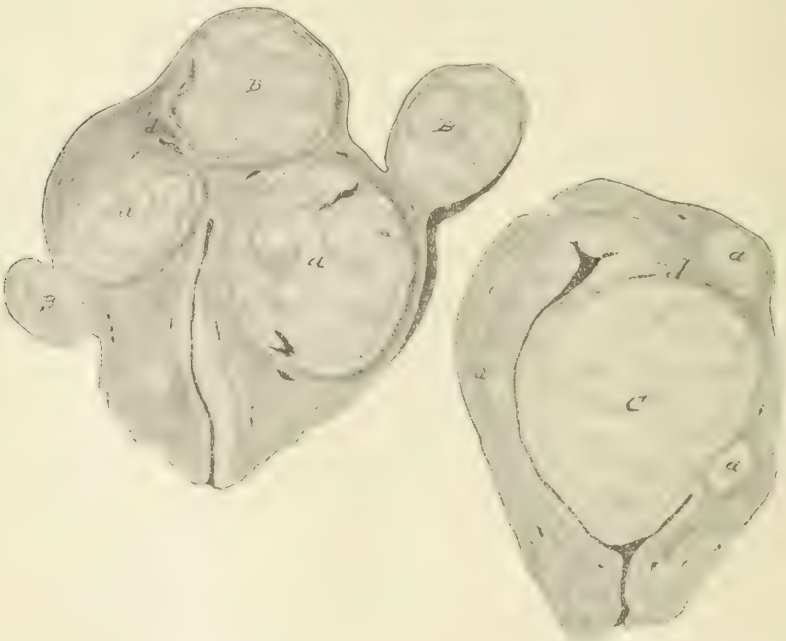


Fig. 1.—Intramural or interstitial, (b) subperitoneal or subserous, (c) submucous fibromata obstructing the drainage, distorting the cavity and aspirating infectious material into the cavity, (d) the large sinus-like veins.

evenly, and rising out of the true pelvis into the abdominal cavity may closely simulate the pregnant uterus. The uterine cavity is usually lengthened and often so misshapen inside by the bulging tumors that the passage of the sound may be difficult or impossible. Intramural fibromata are hard, covered by a thicker or thinner layer of the softer uterine musculature.

At the climacteric the uterine walls themselves may atrophy and become flaccid and thin. Softening of one or more of the tumor foci can occur over a more or less wide area due to edema, myxomatous, fatty or cystic degeneration.

While intramural or interstitial corpus fibromata deep in the wall of the uterus might not hinder the occurrence of intra-uterine pregnancy,

those situated near the mucosa, as well as the actually submucous fibromata, might by the changes usually occurring in the endometrium, especially over the region of the tumor, naturally be considered as predisposing to sterility, both from the changed corpus mucosa being little adapted to the lodgment of the impregnated ovum, as well as due to the hemorrhage (menorr- and metrorrhagia) so common in these cases.

If pregnancy occurs in a uterus with intramural or deep submucous fibroma, as it often does without the tumor being diagnosed, abortion is liable to take place; but pregnancy may persist to near or full term, in which case the mucosa over the tumor often being thinned and having few or no glands and but little interglandular tissue there is very little substance for decidua formation. The chorionic villi are poorly developed, and the placenta is very thin over the tumor and thicker over the normal mucosa and must in consequence cover a wider area, to secure adequate circulation for the fetus. The poor circulation caused by the poorly developed placenta may be the cause of the death of the fetus in pregnancy in some of the cases frequently erroneously attributed to syphilis for want of a better diagnosis.

Placenta prævia may occur due to its increased diameter. During labor the fibromatous portion of the intramural fibromatous uterus not being able to contract (due to its poor development) as much as the non-fibromatous portion, premature (antepartum) separation of the placenta may result. The labor is also liable to be slow. Indeed, Pinard gives fibroma as a reason for some of the very slow labors in old primiparæ. If the intramural corpus fibroma be low down, the shape of the uterine cavity at term may be changed and malpresentations and prolapse of the cord or extremities can occur; indeed, if the tumor be very low in the corpus obstruction to labor can occur, or, if the low intramural fibroma be loose in its bed and near the mucosa, it may be dislodged and expelled and the child follow, or in higher myomata the child be born first and then the tumor.

Tumors have been expelled with the placenta still adherent to them. Adherent placenta is very liable to occur if it lies over the myomatous area, the villi in some cases even having penetrated the tumor itself, making manual removal of the placenta necessary, a fact that should always be borne in mind in adherent placenta. Portions of the membrane may also be adherent. Inversion of the fibromatous uterus may also occur. Postpartum hemorrhage due to the lack of power of the fibromatous portion of the uterus to retract well after expulsion of the placenta is common and sometimes fatal. Involution is slow; myomata may become necrotic and be expelled during the puerperium, a dangerous occurrence. Lochiometra and puerperal infection are common.

2. The subperitoneal or subserous corpus fibroma in the non-pregnant uterus lies immediately under the uterine peritoneum usually high up on the posterior, but may be anterior or lateral, i. e., intraligamentous or parametric. The direction of the growth of the subserous fibroma, if situated near the fundus, is usually much like the pregnant uterus upward into the abdominal cavity (unless retained in the pelvis by adhesions), elevating the uterus to which it is attached, often stretching and

thinning the cervix. Less frequently the uterus may be pressed downward and prolapsed by the tumor. Subserous fibromata are first attached to the uterus by a broad uterine attachment or a large pedicle composed of peritoneum and tumor tissue. In growing it may gradually separate more and more from the uterus till only a thin pedicle remains, sometimes so thin as to be composed only of the peritoneum and a few small blood-vessels. This thinning of the pedicle is seen in very small as well as large sized tumors. As a rule the larger the pedicle the better the blood supply to the tumor. The pedicle may become so thin that entire obliteration of the pedicle vessels may occur, when the vessels, especially of the omental adhesions, assisted by peritoneal adhesions, may continue to nourish the tumor. In other cases the inadequately nourished tumor may shrink in size; so-called spontaneous recovery. Subserous myomata are occasionally found lying detached in the pelvis and mummified, the cut surface free from blood and grey red (Doederlein). Torsion of fibroids with thin pedicles can occur the same as in ovarian tumors.

If the pedicle is sufficiently strong, torsion of the uterus itself at the cervix can occur and cause a hematometra or hydrometra. Indeed, in rare cases one finds both pedicle and uterus torsioned off. If the pedicle is thin, torsion may cause interference with the return venous circulation and result in adhesions and rapid enlargement of the tumor due to engorgement or intratumor hemorrhage, or if the entire circulation is cut off (unless nourished by the adhesion vessels) necrosis, ileus and death can occur. As many as 50 small and large subserous, intramural and submucous fibromata together have been reported in one uterus. The weight of a large fibromatous uterus in rare neglected cases may reach as much as 60 to 80 pounds. Descensus and incarceration of a pedunculated subserous fibroid in the small pelvis can occur.

Parametric intraligamentous or extraperitoneal fibroids, especially if growing from the side of the corpus, can develop between and spread the leaves of the broad ligament, invading the parametrium and pelvic connective tissue generally, as does the intraligamentous ovarian tumor. Pregnancy in a uterus with subperitoneal (subserous) fibromata of small size can occur. Small tumors are probably frequently present all through pregnancy and labor without being suspected. Larger subserous tumors may cause displacement of the uterus, stenosis or atresia of the Fallopian tubes and hindrance of the ascent of spermatozoa and sterility. If impregnation of the ovum does occur, it is conceivable that interference with a normal migration through the displaced or narrowed tubes and extra-uterine tubal pregnancy might result.

If intra-uterine pregnancy does occur in a fibromatous uterus (whether intra-mural or subperitoneal) the hypertrophy and hyperplasia of the pregnant uterus wall may take place unevenly, there being but little development of the part of the wall in which the tumor lies. The tumor may hold the developing pregnant uterus in retroflexion till it becomes incarcerated in the pelvis under the sacral promontory, especially if adhesions be present. Torsion of the pedicle of the fibroma (as preg-

nancy advances and the uterus enlarges) can occur if thin, or torsion of the whole pregnant uterus if thick.

In labor in rare cases the uterus may be held high up by adhesions and remain so even after labor is over, interfering with retraction and allowing grave or fatal postpartum hemorrhage. The tumor may fall down into the cul-de-sac of Douglas and arrest labor only temporarily if the pelvis be of full size, child's head small and tumor very small and readily undergoes softening and flattening, or if not too low it may

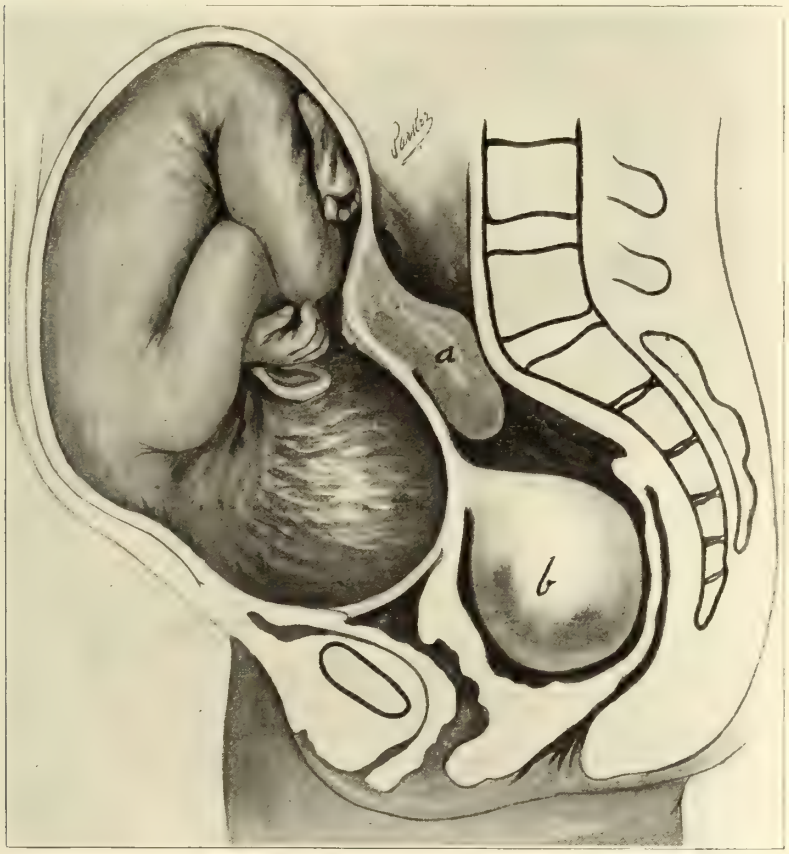


Fig. 2.—Fibromata "at term." The sessile fibroma (a) from the midcorpus might be retracted or perhaps displaced manually above the promontory. The pedunculated fibroma (b) hanging in Douglas' sac would, though very much smaller than in the picture, form an insurmountable obstacle to labor.

retract above the pelvic brim, or lastly it may remain in the pelvis and arrest labor permanently. It takes but a comparatively small-sized fibroma to make a permanent obstruction.

3. Submucous corpus fibromata (in the non-pregnant) lie immediately underneath the endometrium and may gradually protrude into the uterine cavity, and like the subserous are first sessile and later often pedunculated. Broad-based or sessile submucous tumors usually have a

good blood supply. The endometrium immediately over the fibroid may gradually become thinned, the glands may partially or wholly disappear till the tumor is partially or wholly devoid of mucosa, or, indeed, may become enucleated from its bed and cast out of the uterus or pedunculation can occur, the pedicle at first being thick and composed of uterine tissue. Gradually thinning and lengthening of the pedicle may occur and protrusion of the tumor through the internal os into and later through the cervix so that it may protrude from the external os or be entirely in the vagina, the tumor being still attached to the corpus by the pedicle, constriction of which by the encircling cervix may cause marked interference with the return circulation engorgement and increased size of the tumor and increased hemorrhage. In one case of the writer's a iv-para in making a sudden effort to save her child from falling felt something give way, followed by faintness, nausea and increased uterine hemorrhage. Bimanual examination revealed an almost fist-size fibroma in the vagina attached by a pedicle to the corpus. Constriction of the pedicle of the submucous fibroma by the cervix may increase till the entire circulation is impeded and necrosis and later decomposition of the fibroma with a carcinoma-like odor easily leading to a mistake in the diagnosis, especially if the patient be near the climacteric. The pedicle in some cases may gradually become so thin as to be composed of only submucosa and mucosa and but a few if any blood vessels. In other cases the pedicle, though only lead pencil thick, may not lengthen and the tumor grow to man's head size within the body of the uterus. That the submucous tumor frequently causes more or less hypertrophy of the uterus can well be appreciated when one thinks of the liability of constant uterine contractions and efforts to expel the tumor.

The endometric changes in submucous fibromata cases do not appear to be necessarily characteristic. They are often much like those of a fungous endometritis and the hemorrhage often simulates much that due to a chronic endometritis hemorrhagica, neither does the hemorrhage seem proportional to the endometric changes and is said often to come from some place in the endometrium remote from the site of the fibroma. Inversion of the non-pregnant uterus can occur due to the intramural and submucous tumors gradually thinning the true uterine wall and later as the tumor protrudes into the cavity of the uterus it pulls the uterine wall in after it, probably aided by uterine contractions acting on the tumor. The stronger and broader the pedicle the more liable is inversion said to occur, though both thin pedicled fibromata as well as sarcomata are said to have caused it. As the depression forms in the weakened wall on the inverted peritoneal side of the uterus intra-abdominal pressure now assists in rapidly increasing the inversion. In cases of a thinned or weakened place (e. g., the placental site) in the uterine wall and marked widening of the uterine cavity, e. g., after an abortion, immature, premature or term labor the intra-abdominal pressure may be possibly the sole factor in causing inversion at the previously weakened site.

In the non-puerperal uterus the inversion or intussusception uteri is divided into three degrees: (1) where the inverted fundus still lies above the os internum, (2) where the tumor and fundus protrude through the os internum and cervix and os externum and is free in the vagina with the constricting cervix around them as a band, (3) where both fundus and tumor protrude from the vaginal introitus (prolapsus uteri inversio). The encircling band of the constricting cervix usually remains. The weight of the tumor alone is said to seldom cause the cervix to invert, though traction with the volsellum may cause it to do so. The exposed endometrium over the inverted uterus and tumor is engorged, bluish, often thinned or even absent in places, especially if marked inflammatory changes be acquired. In milder cases there may be hyperplasia, the glands growing into the uterine musculature, the surface mucosa forming in folds, or even becoming polypoid. In long-standing cases the mucosa epithelium may even become squamous.

Pregnancy might be expected considering the hemorrhage to be less frequent in the uterus with a submucous fibroma, yet one frequently finds early pregnancy, or at least signs of its having existed in cases where it was little expected, as has been experienced many times microscopically in the Gynecologic Laboratory of Rush Medical College. The remarks already made under the heading of intramural fibroma in pregnancy also apply here.

4. *The degenerations and other complications of fibromata* of the uterus deserve our most careful consideration in the diagnosis, prognosis and treatment. Edema and softening can become so marked as to make the tumor feel cystic to touch, but puncture with the aspirating needle gives at most only a few drops of serous fluid. Cystic fibromata are due to the connective tissue spaces becoming filled with serum or the presence of cavernous lymphatic spaces (lymphangiectoides), in rare cases containing as much as 100 pounds of fluid simulating an ovarian cystoma. Hemangiectoides or dilated blood vessels in fibromata have been previously mentioned (see intramural). Hemorrhages can occur in the tissues of a solid tumor, or intramural or intracystic in cystic fibromata. Fatty degeneration also occurs much as in the normal puerperal involution; indeed, puerperal involution may occasionally occur after a case of concomitant pregnancy and fibroid in both puerperal uterus and tumor. This may occur to such an extent that only a pap filled capsule of the original tumor remains. A fibroma may even entirely disappear after labor is over (Hofmeier). Myxomatous degeneration can occur between the single lobes of the fibroid or between the bundles of one lobe. Calcification (uterine stone) especially in old women occasionally occurs in the subperitoneal and especially in small intramural tumors. The calcium carbonate and phosphate deposit probably most often occurs first in the middle of the tumor where the blood supply is poorest and fatty changes liable to be most marked. In rare cases the sawn surface can be polished. Sarcomatous degeneration of uterine fibromata occurs, according to Doederlein, in over 3 per cent. of uterine fibromata with a marked tendency to recur and form metastases. The sarcoma cut surface is

usually more even whitish yellow and softer than that of the benign fibroma. Every fibroma and its pedicle if pedunculated should be submitted to serial sectioning and microscopic examination, for frequently there are no macroscopic changes apparent in some even advanced cases of sarcomatous degeneration.

On the other hand, myxomatous or other softening may closely simulate sarcoma, and a bad prognosis given by error in such a case injures the reputation of the profession. Carcinoma from included uterine glands or a metastatic carcinoma from some other organ, e. g., the lungs,

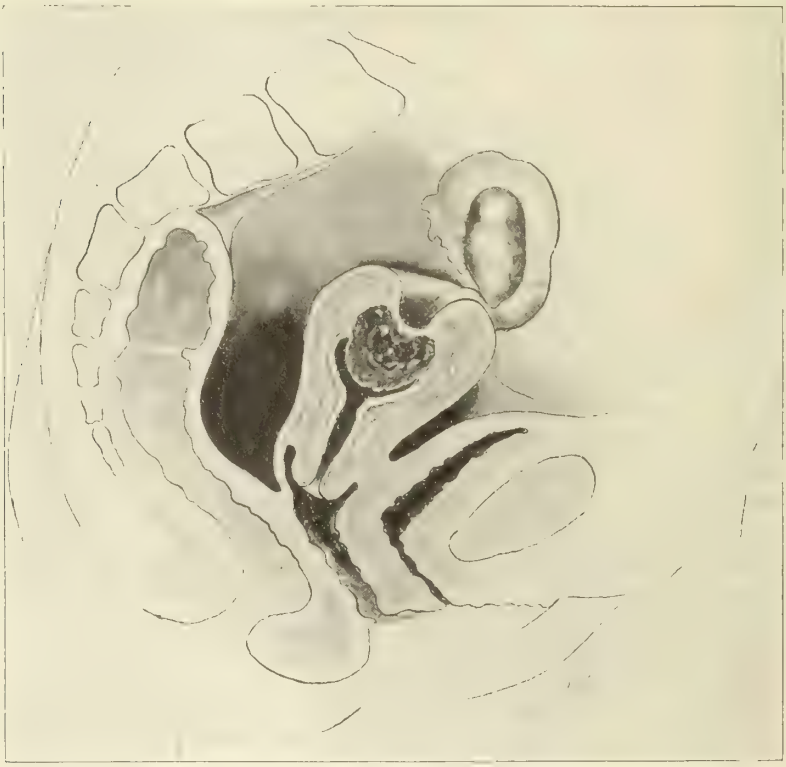


Fig. 3.—*Involution Uteri.* Intramural fibroma radually increasing in size and becoming submucous and dragging in the thinned uterine wall, aided by uterine contractions and intra-abdominal pressure.

can occur in a uterine fibroma or carcinoma by originating directly over the fibroid or in some other part of the uterine mucosa may invade a fibroid. Suppuration of uterine fibromata can occur by infection via the open cervix to the uterus or infection from adherent intestine or via the blood vessels. In the submucous fibroid the tumor often protrudes through the internal os and, indeed, the external os also and literally pumps infection into the uterus, often followed by infection of the tubes, pyosalpinx and pelvic peritonitis. Little by little the tumor may by trauma or poor blood supply undergo superficial infection, necrosis, ulceration and decomposition. Death occasionally occurs from sepsis

while the tumor is still present, or after spontaneous or operative enucleation, inflammation and suppuration of the bed of the tumor without or with thrombophlebitis of the large (sinus-like) uterine veins, phlegmasia alba dolens, embolism of the lungs and simple pulmonary infarct or abscess and death or sudden death from asphyxiation if the embolus be large. In the submucous tumor the constant hemorrhage, anemia and infection are especially to be thought of as inviting myocarditis and nephritis. Concomitant ovarial cystomata occurred in 1.5 per cent., ovarial embryomata in 1 per cent., carcinomata in 3.5 per cent., hydropyosalpinx in 8 per cent., ascites in 2 per cent., free intraperitoneal hemorrhage in 1.5 per cent., once from the large veins on the tumor and once from hematometra and passage backward of the blood through the tubes (Doederlein).

SYMPTOMS AND DIAGNOSIS.

Small fibroids are often entirely symptomless (subjectively) and are often only accidental finds during examination for some concomitant lesion, e. g., infection. In fibromata causing subjective symptoms these often differ less in the smaller subserous than in the intramural and submucous variety.

1. The primarily intramural fibroma in the non-pregnant uterus, if still too intramural to cause hemorrhage, may yet cause some dysmenorrhea due to the misshapen and stenosed uterine cavity giving rise sometimes to abortion-like pains due to uterine contractions to expel the accumulated menstrual blood. The intramural fibroma may as it grows gravitate, as it were, toward the peritoneal surface of the uterus or toward the endometrium; if toward the latter, hemorrhage may occur (menorrhagia gradually merging into a metrorrhagia) and the tumor may gradually become entirely submucous. Incarceration of the uterus and intramural tumor in the pelvis with pelvic pressure symptoms, e. g., constipation, sacral pain and pain also perhaps extending down the thighs. Later as it fills the pelvis, pressure on the iliac veins, varicose veins and even edema of the limbs may be the only symptoms in the purely intramural or those gravitating toward the peritoneum. In other cases, encroaching more on the bladder or situated in the anterior wall and pressing directly on the bladder are especially prone to cause dysuria, retention, ischuria paradoxica or complete incontinence. Ureter pressure, hydronephrosis and uremia are said to be more common in the flat pelves. All pelvic pressure symptoms of the incarcerated pelvic tumor are probably increased by the congestion during the menstrual period. The intramural tumor more usually rises out of the pelvis when the patient often experiences a cessation of the subjective disturbance at least for a time; indeed, the tumor may become of large size before interfering with nutrition due to increase of general intra-abdominal pressure by the hard fibroma. Later pendulous abdomen, diastasis recti (ascites if very large or malignant degeneration) and even hernia can occur. There is no rule; one patient seeks relief while the fibroma is quite small, complaining of marked pain due possibly to tumor capsule stretching, in another case the tumor is surprisingly large before any marked symp-

toms occur. By the vagina very small deeply intramural fibromata may be impossible to feel, while slightly larger tumors are sometimes appreciable as hard places in the uterine wall. Still larger intramural fibromata are felt as circumscribed growths or as a more diffuse hardening of an enlarged uterus. While fibromata usually have a characteristic fibroid hardness, the edematous, myxomatous, cystic or sarcomatous changes may cause it to be comparatively soft. Small fibromata in the anterior wall may increase an anteflexion, while larger fibromata in the anterior wall may push the uterus over in retroversion. If the tumor is on the posterior wall the increased weight is liable to cause a retroversion. The enlargements of the uterus due to gynatresia or pregnancy are usually recognized by the corpus being directly continuous with the cervix and of even shape and consistency. In pregnancy alone the uterus grows more rapidly and is flatter anteroposteriorly, and intermittent uterine contractions are present, while the intramural fibromatous non-pregnant uterus usually grows less rapidly and shows a marked irregularity as to shape and consistency and is usually harder to touch, especially over the tumor area, yet the soft diffuse intramural myoma may enlarge comparatively rapidly and so evenly that the bimanual signs may be much like those of an enlarging pregnant uterus rising out of the pelvis. In one case seen by the writer in consultation (where the patient's veracity as to amenorrhea was doubted) there had been a previous abdominal incision made for removal of the fibroma, but its appearance and consistency was so like the pregnant uterus that the abdomen was closed without removing the tumor. Ten months later the abdomen was again opened and the tumor and uterus removed. Even at the second operation on opening the abdomen the even diffuse development and even consistency was almost exactly like that of the pregnant uterus, and on palpation the hard spots deep in the wall closely simulated the fetal limbs. The guides of most service in this case were the displacement of the tubes and round ligament attachments, both on one side, and the length of time the tumor had existed. In all cases of pregnancy waiting will confirm the diagnosis by the development of the certain signs. The intrauterine sound should rarely be resorted to in fibromatous uteri; it may show the uterus cavity to be markedly lengthened, it is often too misshapen to admit of sounding only with difficulty, or, indeed, it may be impossible: the risk of infection is always great.

2. The subserous fibromata of the non-pregnant uterus, whether sessile or pedunculated, if small, may cause no symptoms beyond perhaps aiding in a malversion or malposition. If the uterus be retroverted or the pedunculated subserous tumor is adherent or retained in the true pelvis due to some other cause it may continue to grow till incarcerated in the pelvis and intrapelvic pressure may give the same intrapelvic pressure symptoms and sequelæ as mentioned in the symptoms of the intramural. Subserous fibromata, if non-adherent, more usually tend to rise into the abdominal cavity and draw the uterus upward. Symptoms may now cease till the tumor reaches very large size, perhaps as big as a 4- or 5-month pregnancy. Later very large subserous fibromata cause all

the intra-abdominal pressure symptoms the same as the intramural tumors. Torsion of the intra-abdominal pedunculated subperitoneal fibroma is less common than in the ovarian tumors, probably because the pedicle is usually more thick and rigid. Patients sometimes complain of the rolling around in the abdomen of the hard pedunculated fibroid.

The bimanual examination often succeeds in outlining both the uterus and the tumor and in the appreciation of their rigid connection. The volsellum attached to the cervix shows both uterus and tumor make a like excursion on making traction. While the subserous pedunculated fibroid is usually hard it may be edematous or partly cystic and soft like an ovarian tumor; again hard ovarian fibroids also occur. A cystic or edematous uterine fibroid attached to the uterine cornua by a slender pedicle may be very difficult to differentiate from an ovarian cystoma.

3. The submucous fibroid in the non-pregnant uterus, like the other varieties, does not usually occur alone. There are frequently intramural fibromata as well as subserous fibromata in the same case. I will only mention here those symptoms peculiar to the purely submucous variety. Hemorrhage from the mucosa, but not necessarily in proportion to the size of the tumor, which may be almost devoid of vessels itself and be partly or entirely denuded of mucosa. It may at first find expression either as a menorrhagia, i. e., increased flow often with increased pain at the regular period, or metrorrhagia a flow outside of the period, or both, often leading to extreme anemia. The flow is occasionally of a serosanguinolent character with exacerbations of violent hemorrhage. Abortion or labor-like pains may occur for months to expel a polypoid submucous fibroma gradually through the cervix into the vagina. Expulsion strangulation, necrosis and decomposition may set in with much decomposing carcinoma-like odor leading to a mistake in diagnosis, especially if the woman is near the climacteric. Again, a young woman with advanced carcinoma in the early thirties that had been diagnosed fibroid due to the hard carcinoma masses in the parametrium was recently referred to me in the Presbyterian Hospital.

Expulsion of the submucous fibroma is said to be especially liable during a period and has frequently been mistaken for a child's head. Inversion of the uterus may occur suddenly or by degrees. While one generally thinks of pedunculation and expulsion as being the rule, yet submucous fibroids often, though only having a lead-pencil-sized pedicle, may still remain entirely enclosed within the corpus uteri and grow to fetal or man's head size, giving rise to an evenly enlarged, *though characteristically round shaped,* uterus. The hemorrhage of fibroma may occasionally cease at the climacteric, though the menopause is often much delayed. The symptoms are often such that they do not permit one to consider the question of postponing the operation. The bimanual examination especially during a period often reveals a patent cervix through which the tumor is plainly felt, or, indeed, the tumor may protrude through the cervix into the vagina itself. The real difficulty in the latter case is to outline the cervix as a band encircling the tumor pedicle and to outline the corpus and fundus uteri. Especially should this be done to exclude

inversion so often associated with submucous tumor near the fundus. The symptoms of inversion of the fibromatous uterus may be few, especially at first, but the bloody discharge, which varies from slight to violent hemorrhages, is usually marked. The interference with the return circulation causes the swelling of the tumor and uterus to increase till the tightness of the constricting band may result in necrosis. Unless the tumor be large one can usually feel the cervical band. Bimanually one can occasionally appreciate with the outer hand (in thin people) a funnel-shaped depression where the fundus uterus should be. The sound will pass but a slight distance in inversion, but may pass to the fundus 7 c.cm. or more in simple polypoid fibroma. Great care should be taken to make this differentiation especially during the operation.

4. Symptons of Pregnancy and Fibroma.—Early pregnancy is often found to be present in cases where it was entirely unsuspected before the operation. Amenorrhea in a woman previously regular with a known subserous or deep intramural uterine tumor, and lessening of the hemorrhage, (menorrhagia or metrorrhagia), in a woman with a previously known superficial intramural or submucous uterine fibroma, together with the more rapid increase in size of the uterus than in simple tumor. During the first half of pregnancy just as hypertrophy and hyperplasia of the normal uterine musculature occurs so do fibromata of the uterus sometimes increase in size very rapidly, due perhaps less to an actual true growth or degeneration process than to an edematous softening. Cameron saw a hen's-egg-size uterine fibroma that in the first 5 months of pregnancy became so large that both the pregnant uterus and fibroma together were as big as a pregnant uterus at the ninth month. Rapid growth in fibroids without pregnancy, it should be borne in mind, may occur in soft myomata or myxomatous or sarcomatous degenerated fibroids. Rapid growth in pregnancy without fibroid also occurs in cases of hydramnion and bladder mole. In primiparæ alone are the breast signs, e. g., areolæ and the enlargement of Montgomery's glands and the secretion of colustrum, of value. The morning sickness is a symptom of value in both primiparæ and multiparæ. Souffles, like the placental souffle, are heard frequently over cavernous fibromata and, therefore, are of no value as a sign of pregnancy, in fibroma. Jacquemin's slaty color of the vaginal mucosa may be from fibromata alone. In fibromata high up near the fundus the Hegar sign may be present, but if the fibromata are very intimately and diffusely united with the lower segment of the uterus or large multiple and irregular in shape and surround the uterus so that the healthy uterine wall is inaccessible to palpation the Hegar sign cannot be elicited. The softening of the corpus uteri can be appreciated in the parts free from tumor as well as changing in consistency, intermittent uterine contractions of Hicks, on palpation per vaginam or per rectum. Softening of the cervix is an especially valuable sign, but even this may occur with fibroma uteri in the non-pregnant. In abortion, immature or term labor the expulsion of a superficial intramural or submucous fibroma before the birth of the child can easily be mistaken for the child's head, while expulsion of the fibroma after the

birth of the child has led to its being mistaken for the placenta. The question whether it is simple pregnancy always has to be answered, for occasionally in malpresentations the child's head may simulate a fibroma. Judging from Cameron's case, a rapidly growing fibromatous pregnant uterus if retained in the true pelvis as it enlarged might about the second month compress the rectum, bladder, ureters and iliac vessels causing varicosities and edema of the lower extremities, or possibly hold the uterus in retroverson or retroflexion with the equally early bladder symptoms of retention like those of the simple incarcerated retroflexed gravid uterus which usually do not occur till near the fourth month of pregnancy. A pregnant uterus with a high corpus or fundus fibroma that rose safely into the abdominal cavity might by the end of pregnancy markedly distend the abdominal cavity, pushing upward the intestines and subdiaphragmatic organs, interfere with the descent of the diaphragm, cause dyspnea, crowd the intestines and interfere with digestion and nutrition, possibly cause ascites and enlargement of the lateral abdominal veins, edema of the extremities and the whole train of symptoms much as would a very large intra-abdominal ovarian tumor.

One should also bear in mind to exclude the bicornuate uterus, twins, fibroma of the anterior abdominal wall, ovarian tumor, incarceration of the gravid uterus, extra-uterine pregnancy, pyosalpinx and chronic inflammatory infiltration.

CERVIX FIBROMATA.

The cervix fibromata, like those of the corpus, are intramural cervical fibromata which occasionally reach considerable size. One lip of the cervix being enlarged, the other lip often appears as a half-moon-shaped fold. In very large cervical tumors the uterus appears as a small appendage simply on the top of the big tumor. The submucous cervical fibroma may become pedunculated early and strangulated, forming an edematous polyp, or may remain broad based. The differentiation of fibroma-polyp, mucous-polyp, adenoma-polyp, sarcoma-polyp, and even early bladder mole should always be carefully made microscopically. The pedicle may only apparently originate in the cervix, but in reality extend through the cervix and be really that of a corpus fibroma or other tumor. The paracervical fibroma may grow outward into the para-cervix, upward into the parametrium, downward into the para-proctium. The diagnosis of cervical tumor is usually simple on bimanual and speculum examination. In the cervical fibroma the corpus can usually be palpated above, provided the tumor be not too large or the abdominal walls too thick. Fortunately they are more rare (9 per cent.), as they are liable to cause much trouble due to ureter pressure and general intrapelvic pressure if large. Lengthening and distorsion of the cervix and lower uterine segment during parturition cause slowness of dilatation due to the presence of the hard fibromatous tissue. The tumor-free portion may not be sufficient to dilate and labor may come to a standstill or the tumor may obstruct the passages, hinder engagement and cause malpresentation, deflexion of head or prolapse of cord or extremities. A very small fibroid of the cervix might become flattened and allow the child to pass or if the labor

pains are strong and the tumor only slightly under the mucosa or pedunculated it may be forced out of its bed and expelled before the fetal presenting part.

An anterior cervical fibroma may even be drawn up above the brim and allow the passage of the child, a thing hardly to be expected in a retrocervical myoma.

TREATMENT.

The treatment of fibromata suggests itself from the foregoing. In cases where there are no symptoms and only a very small subserous or intramural tumor apparently devoid of complications in a young woman very desirous of bearing children, there is a possibility of these women becoming pregnant and going to term and the completion of labor; but such cases becoming pregnant, should always be in a hospital and under competent gynecologic supervision.

In the non-pregnant ergot, which causes the smooth muscle fiber of both the uterine wall and blood vessels to contract, has been too much used as a temporizing measure to limit the hemorrhage in the submucous and possibly to slow the rate of growth in the other varieties. It is at best a dangerous palliative proceeding.

Antiseptic tamponade with iodoform gauze should, if temporarily resorted to for hemorrhage, be allowed to remain but 24 hours without removing. Currettage or abrasio mucosæ may cause a disturbance of the nourishment of either a submucous or, indeed, a superficial intramural tumor and increases the risk of infection. Electrolysis of Apostoli, formerly so much vaunted, carries with it the grave dangers of infection from the frequent introduction of the pole in the uterus, as well as the futility of application. The mucosa may be destroyed, and even electrolytic changes occur in the tumor itself. Electro-puncture by the needle passed into the tumor may result in a fistula or necrosis infection and death. Before leaving the ergot and electricity treatment it is well to remember that one has only a clinical diagnosis, and what one thinks a fibroma may really be a sarcoma, and, therefore, such treatment is blind, as are all palliative measures.

The operative treatment is the only treatment of fibromata and admits of modification in cases carefully selected, e. g., a subserous fibroma or an intramural fibroma might be removed during the reproductive period of life by laparotomy (myomectomy) and the uterus allowed to remain with the idea that the woman might become pregnant and bear a child; yet in most cases there are multiple tumors, and there always remains the possibility of the sarcomatous and other degenerations, the rapid growth in pregnancy, the obstruction of labor and the complication of the puerperium to think of, yet, if possible, the woman should be given the chance to elect.

In the submucous fibromata we have many very ingenious methods of removal designed to remove them by the vagina, and thus avoid opening the peritoneal cavity, either by "morcellement" (Pean) or "splitting" the uterus (Mueller), yet we must bear in mind that in submucous tumors, especially if the cervix be open or the tumor protrudes through,

we have the very great liability to infection of the endometrium, and consequently we have to work in a badly infected field; indeed, the very simple apparently pedunculated cases may really include the inverted uterus so that the peritoneal cavity is accidentally opened. At any rate we are working blindly and making an atrium for the entrance of the infection. The dangers of operating on these apparently simple appearing submucous cases cannot be too strongly emphasized. The intraperitoneal route is much more satisfactory. Fortunately 91 per cent. of the fibromata are confined to the corpus and the supravaginal operation of Schroeder often suffices. In other cases where the cervix must also be removed the chances of injuring the ureters and infection is often much less through the abdominal route.

PERINEAL PROSTATECTOMY.*

ALEX HUGH FERGUSON, M.D.
CHICAGO.

Different surgeons employ different incisions of the skin and subcutaneous structures to gain access to the enlarged prostate. The median incision is the one of choice in the vast majority of cases, because through it rapid and efficient work can be executed with excellent results, especially by a man whose hand is not too large and who is dextrous. Some excellent surgeons have such large fingers that they are practically excluded from attempting perineal prostatectomy. While a short slender finger is at a disadvantage as compared with a long slender digit, still, with the aid of instruments which drag the gland down into the perineum, the former can do satisfactory work. As one surgeon has aptly said, "A short finger becomes longer by experience," but I might add that a stout finger acts as a cork.

Incisions: Median, transverse, Y-shaped, T-inverted, semilunar and modification of these.

From a sufficient number of cases to enable me to have an opinion, I am compelled to say that the median perineal incision is my preference. In a very limited number of cases the entire prostate can be removed without injury to the prostatic or membranous urethra (Macewen and Ferguson). This can never be done suprapubically. Nearly all the operations by the perineal route open the membranous and prostatic urethra; the one for the purpose of introducing instruments which aid in the operation; the other to afford ample room for the enucleation of the gland. In the intracapsular method the capsule must be opened to find cleavage for the finger to separate the gland from its capsule.

While this is true, we must admit that some cases are more suitably dealt with by the suprapubic route. In my opinion, they are vastly in the minority. From my experience I would advise that almost all cases should be first explored through the perineum. If certain portions of an hypertrophied prostate cannot be removed through the perineum, it does

* Read at a meeting of the Chicago Medical Society, March 16, 1910.

not compromise either the surgeon or the patient to open suprapubically and complete the operation. It seems to me that this is much safer than suprapubic prostatectomy alone, or the combination operation reversed. More knowledge can be gained of the size, shape and extent of prostatic protrusions into the bladder by the finger in the perineal wound than by cystoscopy before operation.

Operation.—The bladder is washed out with an antiseptic solution. Six or eight ounces of the fluid is then left in the viscus. A plug of gauze is next inserted into the rectum. A grooved staff is passed per urethram into the bladder. Then the patient is placed in the extreme lithotomy position and held by assistants.

Now pass the middle finger of the left hand into the rectum. Split the perineum in the median line from behind forward. Open the membranous urethra and prostatic urethra as far back as the sinus pocularis, and pass the index finger of the left hand into the wound as the staff is withdrawn. In exposing a membranous urethra to median incision it is probably better to teach that the skin be cut first and careful dissection made through the other soft structure down to the urethra in order to insure against injury to the bulb. Remove the finger from the rectum and pass the prostate depressor into the bladder as the finger is withdrawn.

Remove the glove from the left hand and reinsert the finger into the wound and search for a line of cleavage within the capsule of one or both lobes of the gland. Usually the cleavage can be found near the apex of the prostate and to the left, because the knife generally cuts a little to this side as it opens the prostatic urethra. If cleavage is found, a small transverse incision is made alongside of the finger through the capsule. By means of the prostatic depressor the gland is pulled down as it becomes enucleated by the finger, sometimes in less time than it takes to describe the process. It will be found that the separation of the gland is interfered with where it is covered with vesical and prostatic urethral mucosa. Pulling and tearing should be avoided here; large portions of prostatic tissue may be grossly cut away by means of my prostatic cutting forceps. Both lobes being removed, the interior of the bladder may be readily explored by the finger. If there are protrusions of prostatic tissue in the shape of a pathologic middle lobe, or prolongations from either or both lateral lobes, the first thing to determine is whether the growth is sessile or pedunculated. If the former, it is an easy matter to enucleate it with the finger or remove it by morcellement. If the growth is pedunculated and cannot be delivered through the perineal wound, then the operation should be completed suprapubically.

Where enucleation is easy and the bladder is not septic, deep sutures (No. 0 chromic catgut) are employed to close the urethra and bring together the edges of the levator ani muscles. A small cigarette drain is employed to take care of the discharge from the perineum alone, and the skin is closed by horse-hair.

In septic cases and in very old men with marked prostatic deformity, the gland must be removed as rapidly as possible. The safety of the

rectum from injury and the rapidity of the operation may be increased by the use of a double-edged gouget with a beaded point which strikes the groove in the staff and the knife is passed through the prostatic urethra in a firm, gentle curve. The gouget splits the prostatic urethra laterally, its flat posterior side is toward the rectum and protects it from injury. This is not the operation of choice.

Total enucleation of the prostate gland by Fryer has taught us one thing, viz.: that the preservation of the prostatic urethra is not of so great importance as the advocates of perineal prostatectomy believed. With this in mind we can attack the enlarged prostate without regard to the prostatic urethra and rip it from its bed where all the structures are in reach of the finger One type of gland, the chronically inflamed prostate, usually atrophied, can only be removed piecemeal. A chronically inflamed prostate cannot be removed suprapubically at all. This is also true of prostatic abscess and calculi, and recent experience of Young demonstrates that a malignant prostate can be best removed through the perineum.

In my opinion, it seems unsurgical to attack a contracted bladder from above, except possibly in two steps. Bilateral incisions of the capsule as devised by Proust and exploited by Young, in order to save the ejaculatory ducts, is not considered by decent old men. While the many tractors and depressors are often clumsy and inefficient, though not all immaterial, I prefer my own.

Practically all the sequelæ formerly obtained in perineal prostatectomy in a small percentage of cases are now prevented by the experienced operator. The worst result that can be obtained in prostatectomy is death. "While old age waits to hear the keel upon the other shore" and the old man welcomes death to misery, still life is dear and endurable even though it be almost intolerable.

It is interesting to note that for years the mortality of suprapubic prostatectomy (McGill) when combined with lithotomy has been less than when no calculus was present.[1] Burckhardt gives 13.8 per cent. mortality (4 deaths in 29 cases) for the former operation, and 20.8 per cent. (16 deaths in 77 cases) for the latter. This difference can only be explained on the assumption that the presence of the stone necessitated operative interference earlier, and while the patients were better able to endure an operation than when no calculus existed. . . . The death rate from McGill's operation (partial suprapubic prostatectomy) has always been higher and always will, it seems.

Belfield collected 88 cases of McGill's operation with 12 deaths, a mortality of 13.6 per cent.; Moullin in 1892 collected 94 cases, with 19 deaths, or 20.2 per cent. mortality.

Watson collected from various sources 243 cases of total suprapubic prostatectomy, with 28 deaths, a mortality of 11.5 per cent., while among perineal operations he found 33 deaths, a mortality of 6.2 per cent. . . .

I have now had 185 consecutive cases of perineal prostatectomy with seven deaths as recorded, a mortality of 3.7 per cent. This includes all of the early cases, when the operation was in a developmental stage and much less satisfactory—the patient being confined to bed and the drainage not removed for much longer periods. It certainly does not represent the true mortality. "During the past two and one-half years there have been one hundred cases with only two deaths, a mortality of 2 per cent. But the most convincing evidence of the benign-

1. Deaver's Enlargement of the Prostate, pp. 210-212.

ity of the operation is the fact that in the last sixty consecutive cases there has not been a single death or bad result."[2] (Young.)

[3]"My experience, then, has been that the restoration of function is more complete and lasting after the perineal than after the suprapubic. . . . In the past four years I have operated on 35 cases of perineal prostatectomy. Two cases have died, one three days after operation, the other at the end of a month."

[4]A study of 485 cases of prostatectomy for hypertrophy of the prostate, occurring in the practice of 13 different operators, wherein the cause of death is given, shows in all 33 deaths. Of these deaths ten were due to such causes as cancer of the liver, pulmonary tuberculosis, etc., in no way connected either with the operation or the pathologic condition for which the operation was undertaken. Eight of the deaths were due to exhaustion, pneumonia, pulmonary embolism and sepsis, conditions caused by the operation itself or the anesthesia. It would be nearer the exact truth, perhaps, to say of the deaths due to sepsis, that most of them were due to conditions existing before the operation was done, but for the present, at least, we will consider them as deaths due to the operation *per se*. The remaining 15 deaths were due to pyelitis, pyelonephritis, and other conditions secondary to and caused by the hypertrophy of the prostate, and existing at the time of the operation. Miles F. Porter.

The total death rate in this series of cases then, is less than 7 per cent. "The death rate of the operation is less than 2 per cent., while the conditions secondary to and caused by the enlarged prostate is 3.5 per cent. In other words, half of all the deaths following prostatectomy are due to conditions set up by the enlarged prostate. The deaths from these conditions outnumbered the deaths from the operation *per se*, two to one. This means that the death rate in hypertrophy of the prostate, treated without operation, is about 4 per cent., while timely prostatectomy will yield a death rate of 2 per cent. or less. If there is any error in these statistics, it consists in attributing to the operation itself, too many deaths, and charging to the pathologic conditions secondary to the enlarged prostate, too few. Fuller, speaking of his personal experience with prostatectomy in over 300 cases, says: "I feel that if cases complicated with very marked uremia are excluded I can operate with an average risk to the patient of not more and probably under 5 per cent. *Death from the operation itself is practicaly nil.* (Fuller's cases are not included in the 485 cases studied.))

Goodfellow has done 105 prostatectomies with but two deaths. Watson gives the death rate in enlarged prostate treated by catheterization as 7.7 per cent.

C. H. Mayo, including his brother's cases with his, says: "In two hundred and ninety-one cases, including 26 for carcinoma, we have had 28 deaths."

Willy Meyer writes as follows: "I have done, outside of some 85 Bottini operations for prostatic enlargements, 41 suprapubic and 8 perineal prostatectomies. . . . Personally I prefer the suprapubic to the perineal operation."

Crile says: "In my experience in about 25 operations for prostatectomy the patients themselves were pleased with the result."

My own experience (Porter) is limited to 25 cases. There were three deaths, all due to septic conditions (pyelonephritis and cystitis) which existed at the time of the operation and because of which condition the patients finally asked for relief. . . . The fatalities following prostatectomy are largely due to conditions resulting from the hypertrophy and existing at the time of operation. Prostatectomy, in the absence of serious complications, entails a risk of life of *less than 2 per cent.* The death rate in enlarged prostate treated by catheterization is over five per cent. (Miles F. Porter.)

[5]Dr. Stanley Stillman of San Francisco referred to the custom of Sir William Macewen, of performing the suprapubic operation in all cases in which the urine could be rendered fairly healthy, but when this could not be done he performed a double lithotomy incision for drainage purposes, followed by an interval of a week

2. Johns Hopkins Hospital Report, 1906, iv, 115. Hugh H. Young, Study of 145 Cases of Perineal Prostatectomy. Final Note as to Mortality Jan. 7, 1907.
3. Cabot, A. T.: Modern Operations for Complete Removal of the Prostate, 1907.
4. Porter, Miles F.: Jour. Am. Med. Assn., May 23, 1908.
5. Jour. Am. Med. Assn., July, 1909.

or ten days, during which time granulation tissue lined the incisions which were made, and the capsule of the prostate retracted; in that time the cut surface of the prostate protruded from the wound, the prostate itself was reduced in size as the result of complete dissection, and ten days later he would shell out with his index finger each lobe of the prostate, with no bleeding, and little danger of infection, inasmuch as the urine had become fairly healthy in the interval. Dr. Stillman had followed this plan himself for two years with much better results than he ever obtained from other methods of prostatectomy. His preference is distinctly for the suprapubic methods of operation where the urine is healthy and for Macewen's method where the urine cannot be rendered healthy prior to the operation.

[6]*Percentage of Mortality.*—Including cases of cancer of the prostate in which the typical operation of conservative perineal prostatectomy was employed, 13 recent cases which have not been tabulated above, 20 cases in which operation has been performed since the above paper was written some months ago, and a few cases in which the technic was not the typical one and which have not been tabulated above, there have been 400 cases of perineal prostatectomy, with 13 deaths, a mortality of 3.25 per cent. . . . During a period of two years and eight months 128 consecutive cases were subjected to the operation of conservative perineal prostatectomy without a single fatal result; 43 of these 128 patients were over 70 years of age and two were over 80 years of age.

[7]Suprapubic enucleation of the prostate. In Freyer's series of 644 operations of enucleation of the prostate to date, there have been 48 octogenarians, and nine bordering on this period, with six deaths. . . . In connection with these 644 operations there have been 39 deaths in periods varying from six hours to thirty-seven days after operation, or a mortality of 6.05 per cent. The mortality has been gradually diminishing from 10 per cent. in the first 100 cases, to 4.24 per cent. in the last 200. Freyer mortality 6.05 per cent.

[8]M. Tuffier believes that the suprapubic operation is easier and quicker to perform than the perineal. When the gland is very small and the abdomen very fat, he selects the perineal operation, and quotes from Proust, Watson, Horwitz, Leque, Hartman, Pauchet, Rafin, Young and Albarran, to the effect that there were 2,222 cases, the average mortality being 6.23 per cent.; out of the total number of cases operated on the per cent. of deaths is about the same in both operations (35 per cent. perineal and 33 per cent. suprapubic). Shock is given as the cause of death in 17.8 per cent. operated on by the suprapubic method.

The general mortality is about 4 per cent. in perineal prostatectomy. Reestablishment of spontaneous urination and relief of vesical infection are the rule. The genital loss is habitual. The age of the patient and the lesions are not contraindications. The relative integrity of renal activity is necessary. Patients with grave organic deficiency, such as diabetes and albuminaria, succumb to pretended shock. The two methods have their advantages and disadvantages.

Mortality.—Mortality after prostatectomy is the subject of a paper by Drs. Tenney and Chase,[9] in which they accept as possibly due to the operation every death reported as occurring within six weeks. From their table we find that 2,342 patients were operated on through the perineum, and 667 suprapubically. It will be seen that the average mortality by the perineal route is 7.9 plus. The average mortality by the suprapubic route is 13.2 plus, nearly twice the mortality of the operation through the perineum.

In my own cases I had no deaths in the first series of 21. Following that I lost three cases, one from renal insufficiency in 48 hours. This was considered a very unfavorable case for any operation. Another

6. Young, H. H.: Perineal Prostatectomy, Jour. Am. Med. Assn., March 5, 1910.
7. Ricketts: Jour. Am. Med. Assn., Jan. 29, 1910.
8. Ferguson, Alex. H.: Jour. Am. Med. Assn., 1906.
9. Ann. des Mal. G. U., October, 1902; Jour. Am. Med. Assn., Oct. 25, 1902; Centralbl. f. krankh. d. Harn. u. Sex.-Org., 1901, p. 571; Philadelphia Med. Jour., June 8, 1901; "Treatment de l'Hypertrophie de la Prostate," Report au xv, Cong. Intern. de Med., 1905.

patient died in twelve hours from an overdose of morphin, and the third succumbed on the third day, an unfavorable case because of old age and emaciation. This makes my mortality between 3 and 4 per cent. in 103 cases, and does not include five deaths following prostatectomy, three from carcinoma and two from acute tuberculosis.

There have been no permanent fistulæ seen in those with pus-furnishing bladders, which were inflamed, trabeculated and with stones, pouched or diverticulated. The natural tendency of the perineum is to close spontaneously, but, so long as pus emits, a fistula is likely to persist or recur. I had two of these cases. Injury to the rectum during operation is more of a blunder than an accident, and secondary rectal fistulæ are caused most frequently by rough treatment from the eighth to the twelfth day, when granulation is profuse. This latter has occurred in the case of two of my patients in whom the after-treatment was not carried out by myself. Three patients were wearing urinals on account of partial incontinence, which was more acceptable to them and to their relatives than death. One of these, aged 70, accepted the operation only when life became unendurable from pain due to cystitis, etc. Considerable sloughing at the seat of operation from the skin inward occurred. There was one man with impotence following, who avers he proved his vigor two nights previous to the operation. One case of stricture secondary to operation was cured by perineal section. Five patients had epididymitis. One had unilateral intranephritic and extranephritic abscess developing three weeks after operation. I cured him by incision and drainage. Stone in the bladder was present in six cases.

THE TUBERCULAR QUESTION IN RELATION TO THE ORGANS OF DIGESTION.*

FENTON B. TURCK, M.D.
CHICAGO.

The mortality records, according to Naegeli's figures, indicate that every adult is or was some time in life infected with tuberculosis. Betzke[1] shows in 1,100 autopsies 58.2 per cent. were tubercular. He shows that the majority coming to autopsy show signs of tubercular infection; but more encouraging signs show that the mortality in the last ten years is diminishing in Germany. In 1908 the mortality was 16.46 per 10,000 living, as against 31.9 in 1875. The reduction is striking when we consider that the population has greatly increased.

Franz[2] shows that in 1902, by the reaction of tuberculin, this was positive in 38.7 per cent. of the Hungarian and 61 to 76 per cent. of the Bosnian soldiers, and he concludes that if, instead of using 0.01 gram instead of 0.003 of the tuberculin, the findings would reach the high record tables given by Naegeli on cadavers. But it is interesting to note

* Read before the South Side Branch of Chicago Medical Society, Jan. 10, 1910.
1. Berl. klin. Wchnschr., March 1-9, 1909.
2. Wien klin. Wchnschr., July 15, 1909, xxii, 8.

that very few of the soldiers showed any signs of tuberculosis since 1902, indicating the great value of outdoor life and regular hygiene.

White and Fox[3] made some interesting observations on monkeys in the Philadelphia Zoological Gardens. Of 128 monkeys tested with tuberculin, 37 were positive. Adhering to strict hygienic measures, no monkey that passed the test since 1896 has had tuberculosis. We await the time when human beings obtain the same opportunities and chances that are given these monkeys.

Age When Infection Occurs.—Romer[4] agrees with Behring that tuberculosis in adults is the result of infection in infancy. He infected guinea-pigs, and after a certain period elapsed reinfected them, causing pulmonary tuberculosis with cavities. He deduces from his experiments that the organs of the body show a relatively increased immunity except the lungs, which bear the brunt of the second infection.

Sawyer[5] shows that tubercle bacilli experimentally introduced into the blood are rapidly removed from the circulation and are arrested in lung tissue. To test the route by which particles may reach the lungs, Williams[6] placed rabbits and guinea-pigs in an atmosphere of fine carbon particles, and found that the carbon particles had to be swallowed first, pass through the stomach and become absorbed by the intestines and finally deposited in the lung tissue (anthracosis). Williams concludes that the digestion and absorption of tubercular material are the most common sources of infection. Inhalation and passage directly to the lungs is comparatively rare.

The early sign of tuberculosis, gastrosuccorrhea, Blume[7] demonstrates is the defensive reaction on the part of the stomach against the tubercular toxin, as shown by the immediate benefit derived from antitubercular treatment. Following tubercular infection, Blume observed intense reactions simulating spasm of the pylorus, perforation of the stomach, appendicitis. Treatment directed against the tubercular infection corrected the gastric and intestinal symptoms.

Freund regards most, if not all, cases of viceroptosis as cases of tubercular infection. Albu[8] has recently regarded these cases of congenital infection as being mostly of tubercular origin.

I have for years treated all cases of splanchnoptosis on general hygienic lines, similar to the methods of treating tuberculosis, and the success I have found is in ratio to the strict open air, dietetic treatment, with careful attention to the general laws of hygiene.

Yamanouchi[9] said the detection of tubercular infection may be readily determined by reaction of anaphylaxis produced in animals. The method is first to inject 5 c.c. of blood serum from a suspected patient into a guinea-pig. A day or two later intravenous injection is given of tuberculin or tubercle bacilli extract in salt solution. The reaction is shown by dyspnea, weakness and finally paralysis, and death in one or

3. Arch. f. Int. Med., Dec. 15, 1909.
4. Berl. klin. Wchnschr., May 3, 1909.
5. The Arch. of Int. Med., Dec. 15, 1909.
6. Brit. Med. Jour., Aug. 21, 1909.
7. Ugeskrift d. Laeger, Copenhagen, July 1, 1909.
8. Berl. klin. Wchnschr., Feb. 15, 1909.
9. Wien. klin. Wchnschr., Nov. 12, 1908.

two hours. According to Yamanouchi, non-tubercular and patients with other diseases give a negative reaction to the anaphylactic test.

According to Lewis,[10] the reaction of anaphylaxis is concerned in the removal of the endotoxin or bacterial proteid from the body. The defense of the body against tuberculosis is regarded by Arnuth[11] and Dluski as due to the older neutrophile and polynuclear cells which are the antitoxin bearers or producers and the degree they are destroyed by the action of the infection is characteristic both of specific infection and the resisting powers.

Destruction of the bacilli (bacteriolysis) of tuberculosis, Deycke[12] shows, may be produced by two elements of brain tissue, cholin and neurin, in a 25 per cent. solution as a vaccine producing a destruction of bacilli in a few moments. He reports results so far surpassing his expectations.

In local infections, such as renal tuberculosis, Wilhelm Karo, of Berlin,[13] extols the more refined methods of the use of tuberculin, claiming excellent results, and thinks it of greatest value in treating renal tuberculosis and in its diagnosis. Bladder symptoms also clear up after the tuberculin treatment.

While science is thus attempting to solve the finer points and the underlying principles of the cause and cure of tuberculosis, we are at work applying empirically the general laws of hygiene, fresh air, proper diet and right mode of living, and thus reducing the awful pestilence, tuberculosis. When we found, through the efforts of the immortal Reed and Carroll, that yellow fever was spread by the agency of the mosquito, we did not wait to find the infecting germ, but as soon as our government gave us the opportunity and the means, we snuffed out the disease as if it were a candle, and Havana, but a short time ago the breeding-place of the pestilence, now is as healthy as any city in the world. If our government will give us the same opportunity and means with which to fight the white plague, and with our Gorgas', Woods', Evans' and Billings', we will wipe out this curse that now threatens mankind in this city and in this country.

We know now that fresh air and sunlight, in connection with appropriate diet, will increase the polynuclear cells and the antibodies of the body against tuberculosis; that we must begin this work early, even with the babies, placing them under selected dietetic conditions, with plenty of fresh air. In Chicago we have inaugurated the use of baby tents, supplying suitable foods, as in the care of adult cases. It is the open air that stimulates the desire for food and encourages normal metabolism, but it is out of the food materials we supply the body that the defensive substances against tuberculosis are formed. To throw a patient simply into the open air, uncared for, he will die of tuberculosis, the same in whatsoever country or climate he is placed. The laws of diet, therefore, become the center around which all the other measures revolve.

10. Arch. Int. Med., Dec. 15, 1909.
11. Beit. z. Klin. der Tuber., Wurzburg.
12. München. med. Wchnschr., Sept. 28, 1909.
13. Med. Rec., Oct. 2, 1909.

We know that appropriate diet, prescribed as to age, mode of life and circumstances, will produce marvelous results; that protein or albuminous food should be given in an easily digested form to the limit of digestion and assimilation, but not beyond that limit of absorption and utilization. That the best, easiest and most rapidly digested form of proteid is meat, especially when free from extractives. That extracts of beef, soups and gravies and all patent and proprietary meat food and other frauds are worse than worthless, not only as a food, but they act as poison to the system, as my own and other investigations have shown.

We prepare chopped meat by first removing the extractives with cold water, by pressure, then placing the pulp that remains in a tightly covered jar, with considerable water, and cook it for several hours under pressure. This method removes the extractives and nearly all the indigestible fat (composed chiefly of stearin), and changes the connective tissue into gelatin. Meat prepared in this way is nearly three times as nutritious as in the original form, or, in actual figures, 50 to 60 per cent. protein, as against 20 per cent. It is quickly digested in the upper digestive tract, leaving no residue, such as undigested connective tissue, for the development of micro-organisms in the lower intestinal tract. The meat can be creamed or supply a butter fat more digestible than the stearin removed by the process. Meat loaf, escalopped tomatoes and meat croquettes, rice and meat with curry and various flavors to suit the taste, such as mushrooms, bay leaf, celery, etc., are also added.

A most digestible form of starch, rich in carbohydrates, is furnished by rice. This can be taken when properly prepared in large quantities, and is better than too great a quantity of wheat bread. In rice we should obtain unpolished rice so as to retain the outer coat of albumin, and even soaking is prohibited, so as not to separate the albumin from the kernel and avoid the nutritive value from being lowered. The rice should be boiled until the kernels have swelled up, then placed in a tightly covered double boiler for two to four hours, or longer, under pressure, which partially hydrolyzes the starch. An autoclave is the most serviceable instrument in preparing both meat and starch food, but with sufficient time we may in the ordinary household reduce the rice to a rapidly digestible and assimilable food.

Fresh vegetables, prepared by long cooking, which renders them more easily digested, are used in cases of weak digestion. Fat which has a low melting point, such as butter, cream, olive oil, form the most digestible and assimilable form of fat food, far surpassing the animal fats, such as stearin, which hinder digestion.

We know that we must maintain the integrity of the digestive tract, especially to restore the motor power of the stomach and intestines, and bring the alimentary tract up to the highest degree of physiologic function. Infectious and putrefactive micro-organisms in the intestines must be kept under strict control, producing food that is entirely digested and absorbed in the upper alimentary tract, leaving no residue for the growth of germs in the lower ileum and cecum, thus rendering difficult the production of their toxins.

Ballast of chemically inert substances to stimulate mechanically the peristalsis of the lower bowel can be provided by adding cellulose to the food. One of these substances of value is wheat bran, which can be added to the breakfast food or mixed with bread. Raw vegetables, salads, especially raw cabbage finely cut and a moderate amount of raw fruit, thoroughly masticated, will furnish sufficient acid to combat intestinal putrefaction. In cases where the nourishment should be especially rich in nitrogen, as Labbe and Vitry[14] show, the use of the lactic acid bacilli is contraindicated. The principle that my experimental and clinical work seems to demonstrate is more the importance of producing autosterilization rather than antiseptic measures.

All knowledge we possess relative to the prevention and cure of tuberculosis must in a modified form be imparted to the whole people, now ignorant, but burning for instruction for their welfare, health and happiness. The health bulletin of the city has been so useful that it has been copied by other cities. The churches, under the instruction of competent physicians, should be encouraged to form classes similar to those inaugurated by St. George's Church, New York. Every public school should be a center of instruction for the prevention and cure of tuberculosis, thrown open evenings to the parents of school children. The press, at least the Associated Press, should employ a physician to report regularly the exact facts relating to the cause and prevention and cure of tuberculosis. As the farmer is taught by a bulletin and educated in the proper care of animals, we can expect similar results when the masses are educated in personal and public hygiene. As Florence, removed from the cities like Rome, Naples and Genoa, was the birthplace of Renaissance, so may we not look upon inland Chicago as being a center for a new Renaissance in the health, prosperity and happiness of this great nation?

THE RESECTION OF BONY DEFLECTIONS OF THE NASAL SEPTUM.*

Otto T. Freer, M.D.
CHICAGO.

In almost all deflections of the nasal septum, bone must be removed in order to obtain perfect breathing after a submucous resection; nevertheless, experience has shown me that many operators take away only the cartilaginous portions of an osseocartilaginous deflection and leave its bony part to continue to obstruct the nostril. Before I appreciated the need of a complete removal of all deviated or thickened bone I, too, sometimes contented myself with cutting out only the bent cartilage, always regretting my conservatism and in several instances being obliged to perform an extensive bony resection in a second operation in order to obtain a satisfactory result.

14. La Presse Med., Aug. 4, 1909.

* Read by Dr. John Edwin Rhodes at the meeting of the Chicago Laryngological and Otological Society, Dec. 14, 1909.

The chief reason why bony deviations are so often left untouched is the difficulty of their removal, a difficulty increased by the insufficient access to the operative field obtained in some methods of operation. In addition, the fear of making a perforation during the denudation of the bone deters many from resecting this, especially that portion called the ridge, after the cartilage has been successfully removed. The thick periosteum which envelops the ridge may hide it so completely that operators may, as I have seen, fail to find it at all. While my earlier bony resections proved difficult, changes in the technic have made those of my later work so uniformly satisfactory and free from perforations that I have been impelled to describe in this article my present method of the removal of bony deflections.

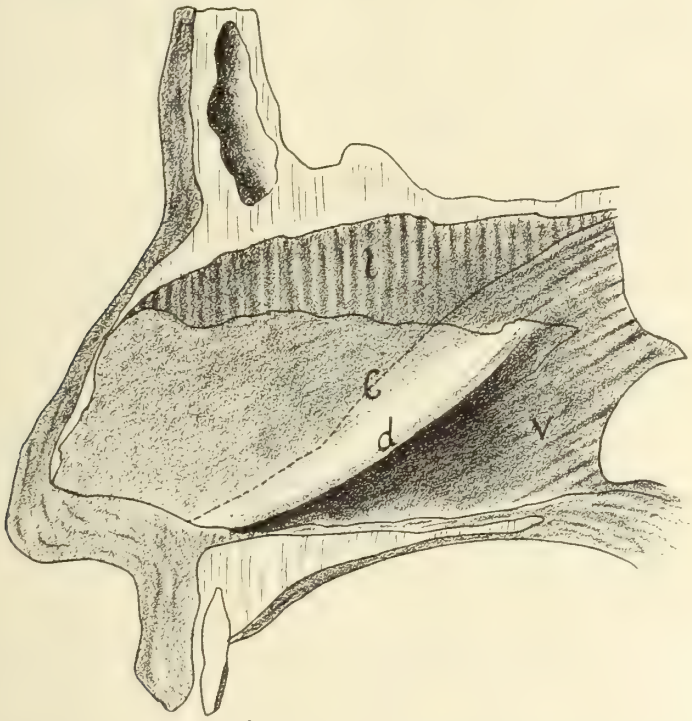


Fig. 1.—Lateral view of the skeleton of the nasal septum; 1, perpendicular plate of the ethmoid bone; v, vomer; c, cartilage of the septum overlapping the vomer upon the displaced articulation and ending in a sharp cartilaginous ridge, d.

Much of the difficulty experienced by operators in taking away the bony portion of deviations lies in an imperfect conception of the often confusing anatomic peculiarities of the skeleton of deflections, and for this reason the surgical portion of this paper is preceded by some anatomic description of the chief divergences from the normal presented by bony deflections in my series of 387 cases.

Anatomic Peculiarities of Bony Deflections.—In this description, for the sake of convenience, the bony wall arising from the nasal floor created by the blending of the anterior portion of the vomer, the incisor

crest and superior maxillary crest are designated collectively by the customary term of "the ridge," used above.

One of the most striking of the anatomic divergences found is the displacement of the septal cartilage from its proper position on top of the ridge to an attachment to its side (Fig. 1) so that the cartilage overlaps the bone. In the normal septum the inferior angle and posterior inferior border of the quadrangular cartilage of the septum rest vertically upon the narrow, rough and often channeled anterior border of the vomer and superior border of the incisor crest, which form the top of the ridge, and in the straight septum the quadrangular cartilage, growing in proper proportion to the bony frame containing it, remains resting centrally and vertically upon an upright ridge (Fig. 2^{1}). When, however, the cartilage, as in non-traumatic deflections, grows too fast for its bony frame, either because of its own excessive growth or because the frame stays too small, it distorts the frame by pressure, bending out its margins by the wedging force of its growth. In this manner the vomer, incisor

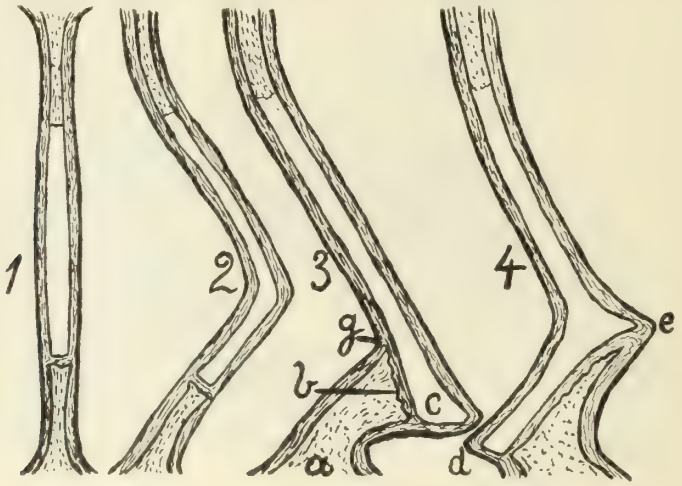


Fig. 2.—Vertical section of the nasal septum about its middle. 1, a straight septum, showing the cartilage resting vertically upon the ridge; 2, a view of a horizontal angle of deflection as it would occur if the articulation between cartilage and ridge remained unaltered; 3, actual changes in the articulation and structures of the deflected septum as they are commonly found; a, overhanging ridge enveloped in its periosteum; b, the articular surface displaced into the naris of the convexity with the cartilage, c, overriding the bone. The individual perichondrial and periosteal envelopes of the cartilage and bone are shown; g, groove of the concavity of the deflection; 4, expectional overriding of the ridge by the cartilage in the naris of the concavity instead of the convexity, creating a ledge, e, and d, in each naris.

crest and perpendicular plate with which the cartilage articulates are bent outward, the ridge becoming inclined toward the nasal floor and, in curving over, causing the narrow rough surface upon which the cartilage rests and with which it articulates to look to the side, instead of upward. At the same time the pressure of the growing cartilage spreads this articulation by forcing downward that margin of the articular surface which comes lowest in its new position. In this way the osseocartilaginous synarthrosis between cartilage and ridge becomes not only displaced in position and direction, but also greatly widened (Fig 2^{3b}).

The lower boundary of the rough articular surface so displaced from the top to the side of the ridge and broadened develops into a sharp bony ledge of the kind sawed off as an exostosis, while the cartilage attached to the articular surface overlaps the bone laterally and ends inferiorly in a sharp angle (Fig. 2^{3c}) which overlies the margin of bone, or bony ledge referred to, and, resting upon it, is sawed away with it by those neglecting to properly resect the deflection of which it is but a small part. The overlapping of the cartilage in the displacement and broadening of its synarthrodial articulation with the ridge is the cause of the cartilaginous covering found upon bony crests and ledges when they are sawed off. It is my experience that almost all bony and cartilaginous ledges and crests are merely the horizontal angle of deflections in the naris of the convexity.

The effect of the tilting over of the synarthrosis between cartilage and ridge, together with the broadening of the articulation, is to place the sharp horizontal angle or crest of the deflection in the naris of the convexity at a decidedly lower level than the groove of the concavity in the other nostril (Fig. 2^{3g}). For this reason, even after the cartilaginous deflection, including the cartilaginous overlapping described, has been entirely extirpated, the groove of the concavity will nevertheless be found to persist until, in addition to the cartilage, the deflected ridge, together with its tilted articular surface, is cut away to the bottom. Only when this has been done will the groove of the concavity be found effaced. It is my experience that, until it be effaced, the obstructed naris of the convexity will not have been sufficiently freed to insure perfect breathing after the healing is complete. Very often the horizontal angle or crest of the deflection lies so near the nasal floor that it is overlooked, unless the operator heed the indication of its presence given by the persisting groove of the concavity higher up in the other nostril. If he find the groove present, he should seek for and resect the concealed ridge.

The displacement of the cartilage and ridge and the consequent overlapping of the ridge by the cartilage almost always take place in the naris of the convexity of the deflection; but I have found a few instances where the overlapping occurred in that of the concavity, the cartilage, in forcing over the ridge, tilting its synarthrodial junction with it into the opposite nostril (Fig. 2^{4}).

It is obvious that the placing of the cartilage beside the bone in the overlapping process doubles the thickness of the septum. This, of course, adds much to the occlusion produced by the deflection and explains the extraordinary benefit of the submucous resection, which removes all this thickness, as compared to the fracturing operations, which leave it.

The overlapping of the cartilage, unless understood, is confusing; for the operator, expecting to find the yielding mucosa of the opposite naris underneath the cartilaginous deviation after its removal, is surprised when confronted by the resistance of the invisible bony wall of the ridge, hidden in its envelope of periosteum. The resection of this hidden bone may seem so difficult as to tempt him to leave it intact, to the detriment of his patient.

The arrangement of the periosteum and the perichondrium do not form a continuous sheet of membrane upon one side of the septum only, like a paper on a wall, but both the ridge and the cartilage have their own periosteal and perichondrial envelopes, the periosteum of one side of the ridge thus crossing over its top into the other nostril, while the perichondrium forms a separate compartment for the cartilage which envelops its lower border, thus making the perichondrium also continuous from one nostril into the other (Fig. 2). The envelope of the ridge and that of the cartilage are, however, joined to each other externally where they are in contact, and are covered by a continuous sheet of mucous membrane. On account of this arrangement of the two envelopes described, the elevation of the covering of one side of the septum may often be easily made with a dull elevator as far downward as the cartilage extends, but becomes impossible below this without a keen blade, because the bottom of the envelope of the cartilage has been reached, and that of the ridge has not been opened. To persist with the blunt elevator in this region results in tearing the coverings of the septum along its bottom.

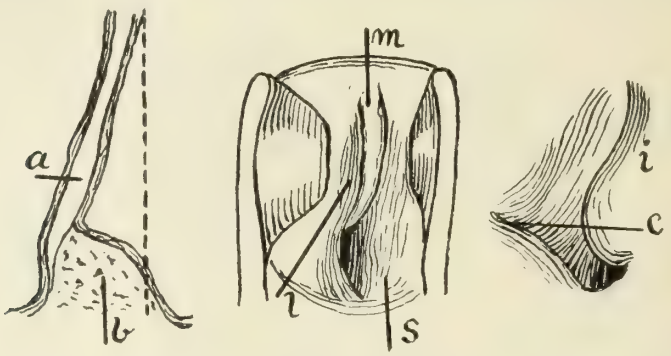


Fig. 3.—A, cartilage of the septum laterally attached to ridge, b, which does not overhang. The dotted line shows median position the septum should occupy after the resection; 1, inferior turbinated body; m, middle turbinate; s, vertical wall of ridge in narrowed naris; c, groove of concavity in open naris; i, inferior turbinate.

While a deflected ridge almost always arches over and overhangs the nasal floor, this overhanging may be absent and the hollow space under the bent over ridge may be filled out, so that on the convex side of the deflection the ridge forms a straight wall, and yet shows the usual leaning over in the naris of the concavity (Fig. 3^{b}). A ridge of this kind is wedge-shaped, and of great breadth at its base, thus depriving the bottom of the naris of the convexity of a great part of its normal width. The condition is a very confusing one; for, while the naris of the concavity presents the usual horizontal groove, or hollow, seen in a deflection involving the ridge, there is no evidence of the deflection in the form of an angle in the other nostril, which seems very narrow, but has a straight bony septum. Ridges of this kind must be extirpated to the very bottom in order to create a naris of normal width. A peculiarity, the opposite of a deflected ridge which does not overhang at all, is found in a ridge which leans over so excessively that it lies almost flat upon the

nasal floor, so that the side which comes uppermost may even be taken for the bottom of the naris.

While the ridge is commonly buried in tough, thick, firm, adherent periosteum, the posterior part of the bony deflection, formed by the junction of the vomer and perpendicular plate of the ethmoid bone, is usually easy to denude of its coverings. This posterior part forms a horizontal angle, which I have called the horizontal bony V (Fig. 4[c], 5[c]), whose apex projects into the naris of the convexity toward the lower turbinated body, sometimes pressing firmly into it. It is this angle which is so often sawed away as a "spur." The upper plane of the angle is created by the bent out perpendicular plate, and below this usually by the broad rough articular surface of the displaced osseocartilaginous synarthrosis

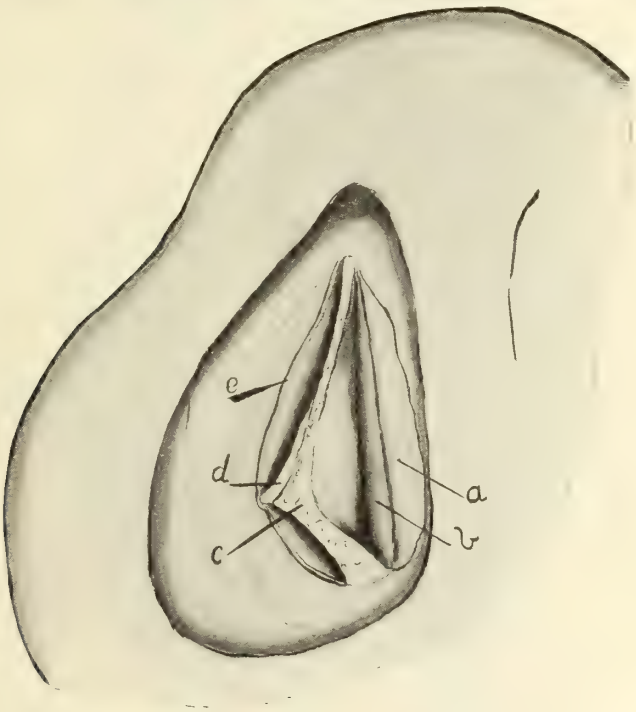


Fig. 4.—View of the horizontal bony V, or angle of deflection, pressing into the right inferior turbinate; a, anterior reversed L flap; b, inner surface of mucous covering of the concavity; c, the bony V; d, overlapping portion of the cartilage of the septum extending backward upon the side of the vomer as a cartilaginous strip; e, detached portion of the mucosa of the convexity, which lies behind the L shaped flap.

alluded to, while the lower plane of the angle is created by the portion of the vomer arching over below the articular surface (Fig. 4). Attached to the rough articular surface, and following the side of the vomer, often far back toward its posterior border, is the continuation backward of the overlapping portion of the cartilage of the septum, which appears in the form of a long strip indented on the surface which is united to the bone (Fig. 4[d]).

Instead of forming the acute angle of a horizontal V, the posterior part of the bony deflection may appear bowed, as a vertical capital C.

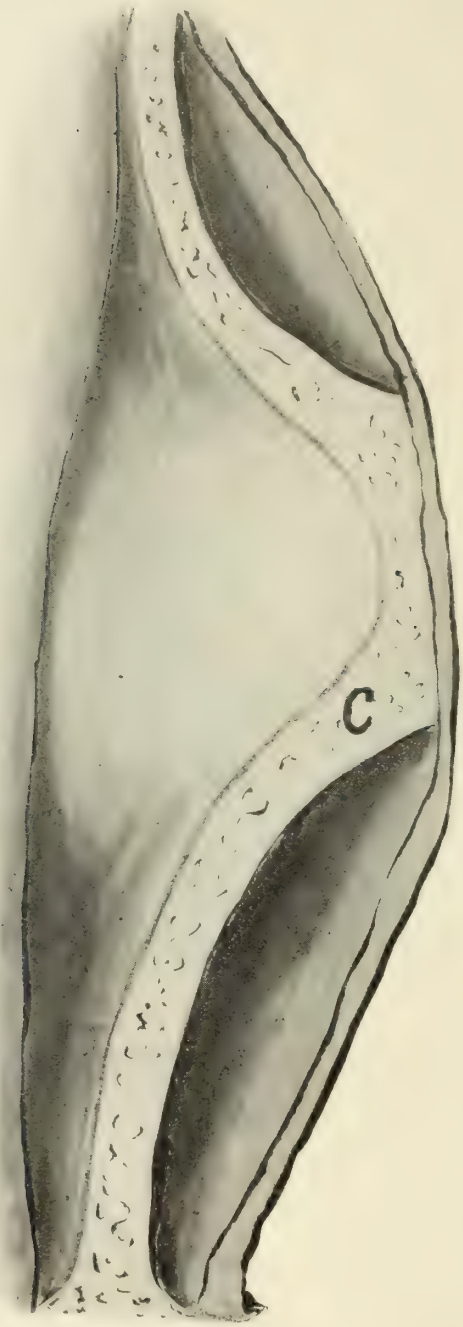


Fig. 5.—Horizontal bony V, c, denuded ready for cutting away.

The bone of the V or the C may be very thick and strong in front, but usually, some distance behind, the operator comes upon very thin paper-like bone into which the V merges.

The perpendicular plate of the ethmoid bone may be vertical in front and deviated only where it joins the vomer in the V. Not rarely, however, the deflection of the perpendicular plate extends far to the front, so that it projects outward into the middle meatus and against the middle turbinated bone, along its whole length.

Unusual thickness of the bony parts of the septum may cause quite as much obstruction to breathing as their deflection. I have encountered ridges three-eighths of an inch, and perpendicular plates three-sixteenths

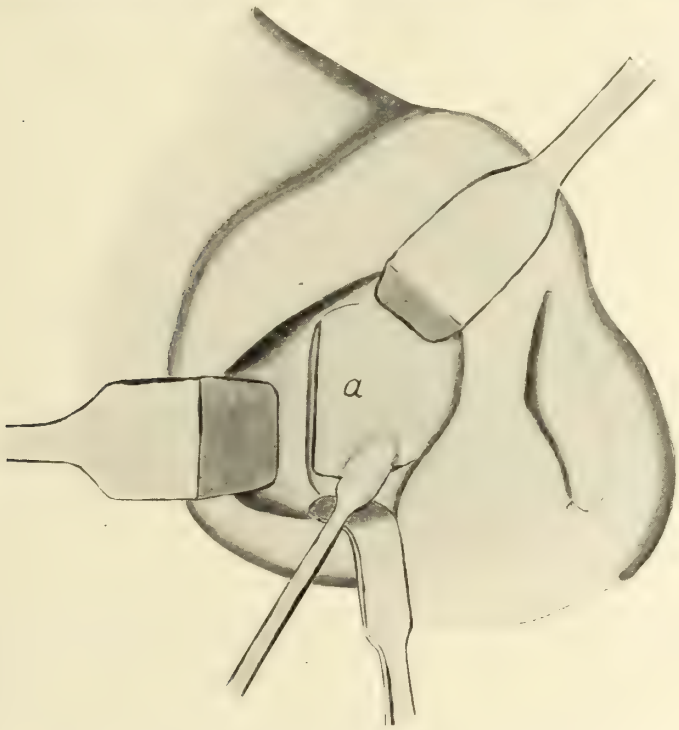


Fig. 6.—The right nostril held open with retractors. The reversed L flap, a, is being elevated from the cartilage from its bottom with the roundbladed knife.

of an inch, in thickness. Even if straight, a very broad ridge should, therefore, be taken away, as after the resection of the cartilage it supports nothing, and its removal gives great space.

The proportionate area occupied by the cartilage and bone in a septum varies greatly. In some rare cases the septum is almost entirely of bone, the ridge rising to a great height above the nasal floor, the large perpendicular plate descending low, and the anterior border of the vomer being steep and coming far forward. The converse of this condition is presented by other septa, less rare, where the cartilage occupies an unusually large area, the margins of its bony frame receding before it,

so that the anterior border of the vomer is found far back in the naris, and the perpendicular plate high up, while the ridge may be scarcely indicated. Only the typical anatomic peculiarities of bony deflections have been mentioned here, the many unusual ones found in a larger series of cases not being described. The latter, however, all show in some measure their relation to the typical conditions.

The Resection of Bony Deflections.—The surgical description in this article presupposes the completed resection of the cartilaginous portion of the deflection and the use of the author's reversed L mucosa-perichondrium flap, which gives a free access to the field of operation. While foreign to the subject of this paper, the difficulty others have had in uplifting this flap makes a word in regard to its creation seem advisable, as its advantages are especially evident in the resection of bony deflections.

As shown in my previous writings, the incisions for the flap are vertical and horizontal, the vertical beginning high up on the septum and descending to the nasal floor, this incision following the vertical angle of deflection of the cartilage, if there be one, or, if there be none, being made well back in the nose. It is my present practice to make the horizontal incision first, uplift the mucosa-perichondrium through it to the site for the vertical cut, and then make the latter. The horizontal incision is carried well forward, usually into the nasal vestibule, from the bottom of the line of the vertical cut along the very base of the septum. The uplifting of the flap (Fig. 6[a]) so outlined is begun from the horizontal incision by means of keen, round-bladed knives of suitable form, found in my set of instruments; for the coverings are always adherent along the bottom of the septum, so that a dull elevator should not be used. Often it is not possible to uplift the perichondrium together with the mucous membrane at the bottom of the flap, and in this event a corner of the mucous membrane of the flap is uplifted alone at first. This exposes to view the perichondrium attached to the cartilage, which is then outlined with the blade and detached to the same extent as the mucosa. This permits the introduction of a dull elevator under the perichondrium and the ready elevation of the flap upward and backward to the site for the vertical incision, which is then made, from underneath with a sharp elevator introduced under the elevated mucous membrane. The flap is then uplifted forward to its base, and so held out of the way with one of my retractors used by an assistant, who, with another retractor, pulls the wing of the nose outward. A third retractor, held by the operator, opens the nostril downward, the three acting as a trivalve speculum, as shown in the illustration (Fig. 6).

After the resection of the cartilaginous deflection its remains, clinging to the ridge along the bottom of the septum, are to be pared away with the thin spatula blade of a sharp elevator, in order to expose to view all of the periosteum of the ridge on the side of the convexity. The cartilaginous strip described as extending backward upon the rough articular bony surface of the osseocartilaginous synarthrosis upon the side of the vomer must also be freed from its attachments and removed. For this purpose a long, sharp elevator is used to separate the cartilage from

the bone, and also to cut around the outer surface of the cartilage, to detach it from the mucous membrane of the convex side of the deflection, to which it is usually firmly united, a dull elevator being rarely able to free it. When disconnected from its surroundings, the cartilaginous strip may be drawn out with dressing forceps. It often extends very far back, and its removal may require patience.

The next step in the operation is to find the concealed ridge by feeling for it through its periosteum with a dull elevator, palpating with this upward from the floor of the nose until the position of the upper border of the ridge is made evident and outlined by the elastic yielding of the mucous covering of the side of the concavity of the deflection above it. The line of the upper border of the ridge having been thus determined, a cut following it is made down upon it from above to the bone (Fig. 7) with the round-bladed knife E of my set of septum instruments (Fig. 8e). This splits the periosteum along the whole length of the top of the

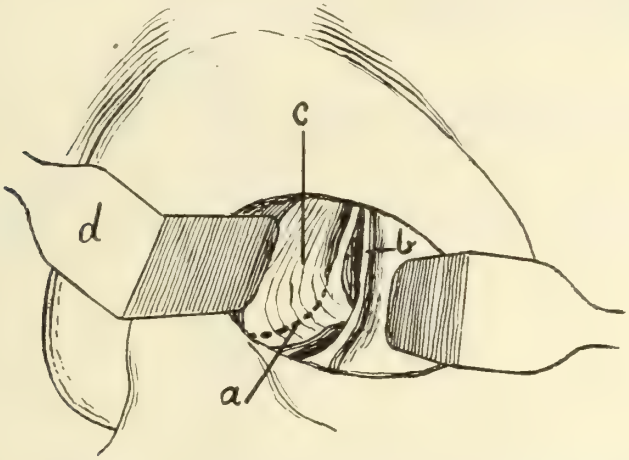


Fig. 7.—The left nostril is held open with retractors. Ridge, a, concealed in its envelope of periosteum; the dotted line shows the incision which splits the periosteum along the upper border of the ridge; b, cut edge of the uplifted mucous covering of the posterior part of the deflection; c, perichondrial surface of the mucous covering of the opposite nostril (naris of the concavity of the deflection); d, retractor holding forward the anterior (reversed L) flap.

ridge. The periosteum in the naris of the convexity is then pushed away from the ridge down to the nasal floor with a little raspatory (Fig. 8) whose blade is curved on the flat. This instrument is described in *The Journal* of the American Medical Association, Dec. 4, 1909.

When this instrument has detached the periosteum from the side of the convexity of the ridge, it is directed backward along the base of the septum in order to denude upon the same side the lower plane of the convexity of the horizontal angle of the bony deflection, or V, this lower plane being represented by the deflected vomer overlying the nasal floor.

The next step is the detachment of the periosteum from the ridge and V on the side of the naris of the concavity. This must be done cautiously, for it is this portion of a submucous resection which in my experience is the most apt to create a perforation, the penetration into

the other nostril occurring unexpectedly somewhere along the top of the ridge. Since employing the raspatory mentioned I have been able to avoid this type of perforation entirely, and I regard this implement as a safeguard against the accident. In order to bare the side of the ridge in the naris of the concavity (other nostril) the raspatory, held firmly close to its cutting end, that it may not slip, is made to progress cautiously over the top of the ridge and down its other side to the floor of the nose, the cutting edge hugging the bone (Fig. 9). The operator may always know from his sense of touch that he is maintaining bony contact, and, so long as he feels it, he may be sure that no perforation can occur. The raspatory climbs over and down the other side of the ridge in a direction which crosses it as nearly as possible at right angles. When the ridge has been thus denuded upon both sides, and lies bared to view, the raspatory is directed backward into the hollow of the bony

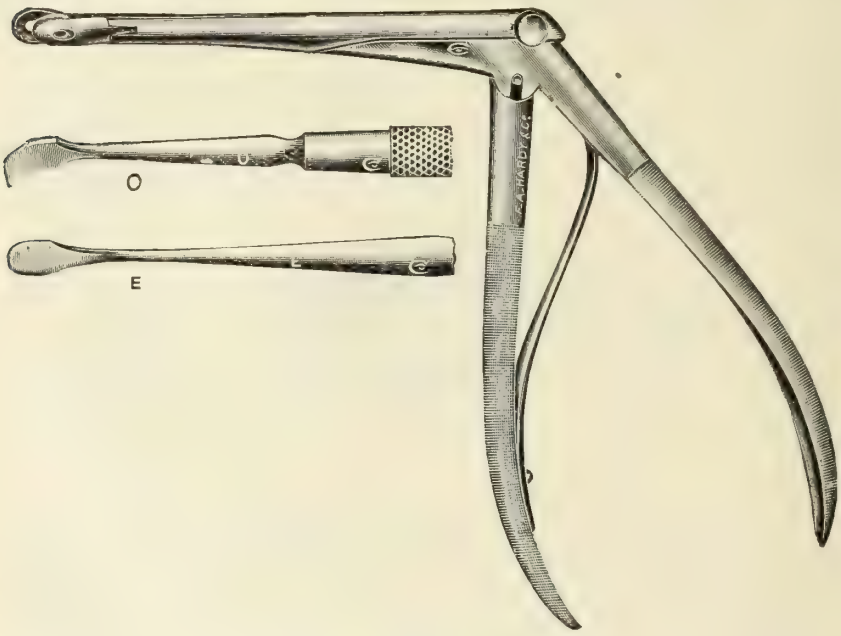


Fig. 8.—E, roundbladed knife, for splitting periosteum along top of ridge; o, raspatory, for denuding ridge; reinforced Freer-Gruenwald forceps.

V and the usually easy denudation of its concavity is completed. When the entire bony deviation seems detached from its coverings and ready for removal, the denudation should be carefully revised with the raspatory and a dull elevator, in order to make sure that there are no regions where the coverings are still adherent. Such places are especially apt to exist near the nasal floor on the side of the concavity of the deviation and, if overlooked, generally lead to the tearing out of the attached piece of mucosa, and a perforation, when the bone is removed.

The open view of the operative field offered by the reversed L flap, recommended by me, makes the freeing of the bony deflection under the guidance of vision possible everywhere, except along the bottom of the

ridge on the side of the concavity, and this perfect inspection of the line of advancing denudation is the best safeguard against tears and perforations.

While the periosteum of the ridge is, with rare exceptions, intimately united to it, that in the hollow of the bony V is generally easy to uplift.

For the removal of the bone I employ the reinforced Freer-Gruenwald forceps (Fig. 8), described by me in previous articles, and the small chisel of my set of septum instruments. Many of the chisels suggested for the resection of the bone are too large, hence obstructing the view during their use, and their excess in width makes them liable to cut through the mucous coverings beyond the limit of the bony cut they are making. A V-shape for the chisel blade is unnecessary, as the simple flat blade may be better controlled, may be kept sharp, and requires less propelling force.

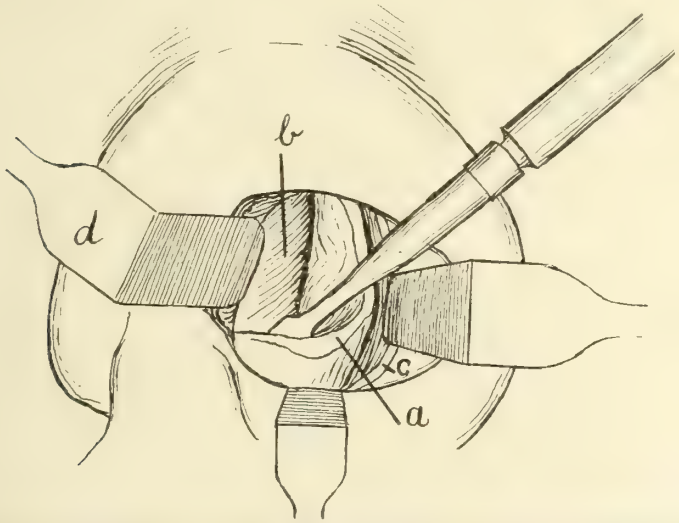


Fig. 9.—The left nostril held open with retractors; the entire bony deflection including the ridge, a, has been bared of its covering by the raspatory, which may be seen working towards the nasal floor on the concave side of the deflection; b, mucous membrane of the opposite nostril uncovered by the removal of the cartilage and uplifted from the bony deflection; c, cut edge of the uplifted covering of the posterior part of the deflection held away with a long retractor; d, retractor holding forward the anterior (reversed L) flap.

Since I have reinforced the forceps I have never met with bone in the septum which it will not cut through with ease, the thickest I have used it upon being three-eighths of an inch thick.

The removal of the ridge I now always begin with the chisel, cutting along the floor of the nose through the incisor crest and back under the vomer almost, or quite, as far as it has no bony connection with the perpendicular plate above. Then by lifting the shank of the chisel the undercut fragment of bone breaks off at the rearmost end of the cut. In this manner all of the deflected or thickened ridge, as far back as the bony V, is taken out in one piece. I know that the chisel is also used back of this anterior portion of the bony septum to detach the bony V above and below, this detachment being followed by breaking out of the

thus partly severed fragment with dressing forceps. But I regard this as a dangerous practice. The frail perpendicular plate in this portion of the bony septum is liable to be shattered by the chisel, and far-reaching fissures may be created by the breaking away of the fragment still attached behind. That this is no imaginary danger is shown by a case related to me by Professor Bernard Fränkel and Professor Edmund Meyer, of the Charité Clinic, in Berlin, in which blindness of one eye followed the breaking out of such a fragment in a submucous resection, a fissure having evidently traversed the sphenoidal sinus into the optic foramen. In another instance, of which Professor Koschier, of Vienna, told me, the entire vomer was twisted out of the nose. It is permissible, in my judgment, to break out fragments of bone posterior to the junction of the vomer and perpendicular plate if the bony V has been completely severed from its connections above by means of the punch forceps, and when the thus partly detached bone is found to be movable and obviously almost severed from its surroundings. In this manner I often remove the entire bony V in one piece. In the majority of cases, however, it is easy to cut out the V, piece by piece, with the punch, in a few minutes. Firm bone should never be broken out with seizing forceps.

The fixed blade of the punch forceps is used as a guide in applying the forceps for its bite, this blade entering into narrow places, as where the bony V described presses into the inferior turbinated body, and must be wedged away from it with the forceps blade before the instrument may be applied to the bone. For this reason I regard both a right and a left opening forceps as a necessity in the operation.

Deflections of the perpendicular plate outward should be followed as high up as they extend toward the nasal roof. They are easy to excise with the punch, and their removal clears the middle and superior meatuses.

The actual excision of bony deviations seldom takes more than a few minutes; it is their denudation which requires time and care. The cutting away of the ridge is sometimes followed by free bleeding from the cut vessels of the bone. In all but rare cases, however, the hemorrhage during even the most extensive bony resections is insignificant and sometimes almost absent. Bleeding hiding the field of operation is best controlled by an application of the flake crystals of pure cocain, on a swab moistened with adrenalin, according to the method I employ for the local anesthesia.

In men the ridge is often very broad and thick, and strong blows of the mallet may be needed to chisel it away. The angle of the V and the perpendicular plate may also be very thick; but after these parts have been removed a thin, egg-shell-like continuation of the deflection is usually found in the posterior part of the vomer which may generally be taken away by twisting it out with dressing forceps.

When all the bony deviation seems cut away, the flaps are to be replaced. If they lie down flat, the resection is complete; if not, the projecting fragment hiding them away must be sought for and removed.

I have never known harm to result from even extensive resections of the bone of the septum, and have never felt the need of inserting pieces

of cartilage between the replaced coverings in order to stiffen the partition. In concluding this article, I advise a complete extirpation of bony deflections to prevent the disappointment following an incomplete resection. For the after-treatment I refer to my other articles on this subject. Much of what I have written here concerning the removal of bony deflections represents my later technic, and is not to be found in my previous publications.

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6. Die Submuköse Fensterresektion der Nasenscheidewand, Nach eigener Methode Ausgeführt. Fränkel's Archiv für Laryngol., 1906, Vol. 18.
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9. The Submucous Resection of the Nasal Septum. 50 pages. Published by the Jour. of Ophthalmol. and Oto-Laryngol., Chicago.
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THE SEPTAL SPUR AND ITS REMOVAL.*

F. Gurney Stubbs, M.D.
CHICAGO, ILL.

In maintaining or restoring the patulency of the nasal passages, one often has to carefully consider whether to attack the outer or median wall. The conscientious operator hesitates to remove the lower turbinate or to trim it too closely. Cauterization will not avail in those cases where the normal swelling of the turbinate occludes the passage. In such cases it is a question of septum only to be altered. Now that we have an operation adequate to all forms of septal deviation, the submucous resection of the septum is indicated in all marked deflections of the septum which offer obstruction to the passage.

But in a certain number of cases a ridge or spur on the septum projects enough to cause obstruction when the turbinate becomes engorged. In this class of cases the proper removal of the spur will give adequate relief without any interference with the proper physiology of the nose.

The great frequency of the septal spur is due to the complexity of the septum in its development. Beginning in earliest fetal life as a cartilaginous septum, about the third month two centers of ossification appear low down posteriorly, which form two plates of bone. These unite posteriorly and form the posterior end of the vomer, while its anterior edge forms a groove into which fits the cartilaginous part of the septum. As ossification advances, the edges of these two plates of the vomer coalesce and include in a canal a strip of cartilage. Farther forward the anterior lower point of the vomer is separated from the spina nasalis

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* Read at the meeting of the Chicago Laryngological and Otological Society, Dec. 14, 1909. For discussion see page —.

anterior by an interval, which is filled in by two small lamellæ of bone, which form a groove, in which the quadrangular cartilage rests. These two lamellæ either join the two plates of the vomer, or contain them in the groove. In addition to this prevomer bone, there is on each side of the septum just behind the anterior nasal spine, a small cartilage called the cartilage of Huschke. This contains a small blind duct and is the rudimentary remains of a cartilaginous capsule of Jacobson's organ, which in some animals is well developed. At birth the perpendicular plate of the ethmoid is a mere bony ledge, which gradually ossifies downward, but so slowly that even at the fifth year there is a strip of cartilage separating it from the vomer. Not until the ninth year is it firmly welded to the vomer.

On account of these various relations of the parts of the septum do we meet with spurs so often and at fairly constant positions. Broadly speaking, they are found running upward and backward from the anterior nasal spine toward the rostrum of the sphenoid. Those anteriorly are low down, often resting on the floor of the nose, and are apt to be bilateral. If an enlargement of Huschke's cartilage, it is found just back of the nasal spine. It is entirely surrounded by connective tissue and outside of the periosteum of the prevomer and vomer. Very frequently the quadrangular cartilage fails to rest in the groove of the prevomer or vomer, and then we find its lower edge projecting into one naris and a bony ledge or spur in a corresponding position in the other naris. But the spur most frequently met with is where there is a dehiscence of one side or the other of the canal in the upper edge of the vomer. This causes the contained strip of cartilage to lie outside of and parallel to the cartilago-vomer junction. It often extends nearly to the sphenoid. Frequently it lies in a groove on a knuckle of bone at the angle where the perpendicular plate, vomer and cartilage meet, so that its posterior end is sharply terminated. In this class of cases there is always a sharp angular concavity, shallow but well marked, on the opposite side. Hence a spur in this situation can obstruct both the inferior and middle meatus at the same time.

Unquestionably, many spurs increase in height and breadth from a low-grade inflammation of the overlying perichondrium or periosteum. This is due to the constant irritation of the inspired air or the pressure of the adjoining turbinate. On the edges of the spur in these cases the mucosa atrophies and becomes very thin. The corresponding pressure on the turbinate often furrows it and in time forces the middle turbinate so far toward the outer wall that the drainage of those sinuses which empty into the middle meatus is so interfered with that a sinusitis is more apt to occur.

Hitherto most operators have been accustomed to remove the nasal spur with a saw. But the day of the saw has passed, as has that of the tonsillotome. And why? Principally for two reasons: First, that it destroys the mucous membrane, and second, that it does not in most cases leave a smooth septal wall. It is most imperative that in all operations on the septum the mucous membrane must be left intact, as far as possible. Wherever there is a substitution of scar tissue there is always a

continual formation of dried secretions on that area with all its attendant annoyance from blocking of the passage and tendency to bleeding. The nearer this area is to the anterior naris the more the crusting and discomfort. When a saw is used to remove a spur it necessarily removes the overlying mucosa and lacerates neighboring parts.

In the second place, the saw can only at best remove the spur flush with the septal wall, and in the healing process such a thickening occurs that often almost a new spur is present when final healing is complete. This is a fact that anyone who honestly reviews his work with the saw will have to admit. In order to overcome this thickening process of healing, it is necessary to replace the line of the spur with a groove, so that final healing may produce a flat surface. While this is often attempted with a saw, it is rarely successful.

In order to provide against loss of mucosa and at the same time secure a flat septal surface, I have in recent years employed the following technic: A semilunar incision is made just anterior to the spur and at right angles to it, through the mucosa and perichondrium. Through this incision the soft parts are elevated over the entire spur, the same as one proceeds in a submucous resection of the septum for deviation. A chisel is then employed to cleave the spur from its base, and finally the spur is withdrawn through the first and only cut. The mucosa is then pressed flat and held in place by a Simpson nasal tampon. In case one has to deal with an extra large spur where there would be an excess of mucosa, so that when applied to the septal base wrinkling would occur, it is best to make a horizonal cut along the lower edge of the mucosa which has been elevated, and trim off a strip so that it will fit accurately and leave no raw surface.

The choice of a proper chisel is of extreme importance. The one I have found best adapted to the purpose is the Hajek spur chisel. This is curved on the flat like a gouge, so that it leaves a concave groove when the spur is removed; its end is recessed in a V shape with the two points slightly rounded. This enables one to hold the chisel to the direction intended and so prevents slipping laterally. There are three different breadths in a set, which fit into a handle at right angles to the shank of the chisel, and so one has better control, while the hand is not in the line of vision while directing the chisel. I would call attention to the fact that the Hajek chisels usually found in the shops are coarse and clumsy and ill adapted for the purpose. Referring to that class of spurs I have described where they surmount a slight deflection of the septum and there is an angular concavity, I have found that in order to attain a perfect result, it is necessary to remove the entire thickness of the bony parts affected. This under ordinary conditions would entail a regular submucous resection. I believe I have surmounted this necessity by carrying the spur operation one step farther. Choosing a chisel that will completely span the width of the spur, following the elevation of the mucosa, I introduce it at the anterior end of the spur. Driving it backward, at the same time I direct it on a slant through the septum. As it emerges on the opposite side, watching it meantime through this side with the eye, it acts as an elevator of the mucosa of the concavity as far

as the end of the groove or spur. I then direct it back again through the septal wall. Upon withdrawing the spur it is seen that the whole thickness of the bony septum is included with the spur. Should the width of the base be too wide to easily handle with one gouge of the chisel, I use a narrower one, and sever first the upper and then the lower edge, when the entire spur can be withdrawn intact.

This operation virtually makes a modified submucous resection operation, but one so simple that it requires but a few minutes; while at the same time it gives a perfect result as to a smooth septal wall and complete preservation of the mucous membrane. Another result not to be lost sight of is that healing is complete in a few days. No prolonged after-treatment with its annoying discharge and liability of complications. While this technic requires more surgical dexterity than does the use of the saw, the results justify the exertion. And while only for a spur, yet if that spur causes sufficient symptoms to be removed, it should be removed right.

103 State Street.

THE RECENT USE OF STOVAIN IN CHICAGO.*

HENRY F. LEWIS, M.D.
Attending Surgeon, Cook County Hospital
CHICAGO.

It is not my purpose to write a complete treatise on spinal anesthesia, nor indeed, to go deeply into the subject of stovain as a spinal anesthetic. The names of Corning, Bier, Gauss, Hofmeier, Jonnescu and a host of others will recur to your minds, marking epochs in the history of the subject. In the days when cocain was new and therefore wonderful, it was employed freely as a local anesthetic until its frequent baneful effects began to be understood. Because it has baneful effects (and what drug has not?) we are not therefore minded to throw over cocain, but still recognize it as a valuable weapon in proper hands and under proper circumstances. Cocain was used in fairly concentrated solutions for local anesthesia in minor operations and, in weak solutions according to the method of Schleich, even for major work, such as laparotomies. In this way it acted upon the peripheral nerves in the actual region under the knife. Later it was used by injecting around the main trunk of a nerve to cut off sensation in the parts supplied thereby. From that it rationally followed that it would be considered as a means of cutting off all sensation in the lower part of the body by being injected in or near the spinal canal. As a matter of fact, injection into the tissues outside the dura is so uncertain in producing anesthesia that it is necessary to inject the drug actually into the spinal canal where it mixes with the cerebrospinal fluid. For this subdural or so-called subarachnoidal injection cocain was employed at first. In doses sufficient to obtain the effect desired its toxic effects often became too apparent. Therefore the substitutes for cocain which have been discovered or invented in recent years, such as eucain, novocain,

* Read before the Chicago Medical Society, Feb. 9, 1910.

tropocain and stovain, have been and still are being injected for spinal anesthesia. The literature of the continent of Europe and to some extent British literature teem with reports and articles dealing with these subjects. To combat the depressing effects of these drugs various other drugs have been recommended for incorporation into the solution. Some of these were intended to correct the depression and toxic influence on the heart and others to control the specific gravity of the solution. Chief among them are adrenalin, glucose and strychnin. Jonnescu employed strychnin as the corrective drug. He also perfected the technic of injection and worked out the proper dosage and proper dilution.

Up to the advent of Jonnescu in this country I must confess that I had been rather indifferent to the whole subject of spinal anesthesia and stovain, being lazily content with ether, chloroform and gas for general anesthetics. When Jonnescu came to Chicago I was asked by some members of the Chicago Surgical Society who were on the surgical staff of the County Hospital, to operate on some of my cases before a clinic arranged by that society in the amphitheater of the hospital. It so happened that Tuesday was regular operating day for Dr. G. F. Thompson and myself. As the clinic fell on our day, we were asked to submit our cases before it. Dr. Thompson had two cases and I had two. One of my cases was a woman suffering from the effects of a retroverted and adherent uterus upon whom I intended to perform an abdominal operation for shortening of the round ligaments. By misunderstanding of orders in the ward, this patient received the usual routine hypodermic of morphin and atropin before coming to the operating room. When this circumstance was communicated to Jonnescu he refused to inject the stovain solution. His colleague, Jianu, informed me that he feared the action of four powerful alkaloids, and that in addition their experience had been that patients who had received morphin did not obtain as complete or lasting anesthesia. My second case was a man who had frozen all his toes several weeks before and suffered from gangrene in consequence. His toes were amputated and his is the first of the cases which I report to-night.

Case 1.—A. H., aged about 30 years, case number 411,518, admitted Nov. 26, 1909, gave a history of having frozen his toes while spending the night in a freight car during a Dakota blizzard some week or two before entrance. A superficial gangrene involved all the toes of both feet. When the sloughs came off all the skin and much of the deeper tissue were gone and granulations covered the digits. Therefore amputation of all the affected toes was decided upon in order to give the man useful feet.

The operation was performed in the clinical amphitheater of the hospital, Dec. 21, 1909. A solution of stovain and strychnin was injected into the space between the twelfth dorsal and first lumbar vertebræ by Prof. Jonnescu. In seven minutes I began amputating, making skin incisions of course through normal integument. The patient did not experience the slightest discomfort but talked and joked with the assistants while his toes were falling on the floor. The only after effect was a slight evanescent headache. He slept well that night and rapidly recovered.

Case 2.—L. P., aged 35 years, entered the hospital Jan. 6, 1910, for an inguinal hernia. He was operated on by the Andrews method, Jan. 7, 1910. A solution furnished by the hospital pharmacy and consisting of stovain gr. 1½, strychnin sulphate gr. 1/60 in two centimeters of sterile water was injected between the last dorsal and first lumbar vertebræ. The anesthesia lasted forty minutes in spite of

the fact that he had received one-quarter of a grain of morphin half an hour before the operation. He was able to move his feet within twenty minutes. He made no complaint and lay perfectly still throughout the operation, but when asked in Polish whether it hurt replied very cheerfully in the affirmative. His only trouble was a very slight headache lasting less than twenty-four hours and not enough to prevent his sleep. He also complained of some pain at the wound. He was discharged well, Jan. 20, 1910.

Case 3.—F. W., aged 21 years, No. 414,726, was admitted to the hospital, Jan. 10, 1910, for double inguinal hernia. He was operated on in my regular Wednesday afternoon clinic, Jan. 12, 1910, in the amphitheater. The same injection was made in the same locality as in the others. Operation was begun five minutes after the injection. Patient experienced absolutely no pain or discomfort during the Bassini operation on each side. He slept that night after midnight. His pulse just after reaching the ward was 92, temperature 99 and respiration 28. Next morning all were normal. He left the hospital in about two weeks perfectly well.

Case 4.—J. R., aged 60 years, entered the hospital Jan. 9, 1910, suffering from a fracture of the left patella just incurred. The examining room diagnosis was fracture of the patella and alcoholism. He gave a history of living in cheap lodging houses and using much alcohol. The nurse entered in her notes when he came into the ward that he came in on a stretcher, cold and intoxicated, with pulse weak and mucous râles in the trachea. External heat was applied and the man put to bed. Hot applications were kept at the seat of fracture. There was a large amount of fluid felt in the knee joint and the patellar fragments were separated about two inches. It was decided to suture the patella after emptying the joint.

The operation was done in clinic directly after the operation on Case 3. Before going to the operating room the pulse was 90, temperature 99 and respiration 20. He appeared to be in fair condition. He certainly seemed, on account of his age and history, to be a bad case for ether narcosis. Stovain was injected in the same strength and in the same manner as in the other cases. Within about four minutes after injection he was unable to move his feet and felt no sensation at the seat of fracture. A longitudinal incision was made over the left patella opening the joint. About half a pint of fluid blood and clots was cleared out of the cavity. The fragments of the patella were united by sutures of kangaroo tendon. At this point, about fifteen minutes after the injection, the patient said he was drowsy. The operation was rapidly completed. In a few minutes after the drowsy symptoms his respirations began to fail and the heart to weaken so that the radial pulse could not be felt. Artificial respiration was maintained for several minutes as the dressing was being put on and the respiration and heart action gradually returned. The pulse at the wrist became very full and slow, about 60 to the minute and the respirations became apparently normal. He was returned to the ward. In about ten minutes he began to have clonic convulsive movements of the arms and hands, followed by athetoid movements. He became restless, talked incoherently and shouted wildly, moving his arms about in purposeless motions and even moving his legs a little. About half an hour after leaving the operating room he again began to fail in pulse and respiration and died in spite of renewed efforts at artificial respiration.

Since his death was caused indirectly from the accident of falling and fracturing his patella, he became a coroner's case and therefore an autopsy by the hospital pathologist was not permitted. One was performed by the coroner's physician in the usual course. Although the coroner's office was notified at once of the circumstances of the death and a request made for permission for myself or interns to witness the autopsy, through some error the coroner's physician was not informed of the fact that the man had received stovain until after he had performed the autopsy. The autopsy was performed two days after the death of the patient. The brain and cord were removed and examined four days later.

As to the autopsy findings I quote from a copy of the coroner's notes. "On inspection body presents punctured needle wound over twelfth dorsal vertebra.

On opening skull, brain negative; right and left lungs show considerable fibrous tissue here and there and some coal pigment, also superficial region of atelectasis. About apices are some areas of bulbous emphysema, otherwise lungs are not altered. Heart shows slight coronary sclerosis but no other changes. Spleen normal. Fracture of left patella, kidneys normal. Spinal cord vessels dilated. Stomach and intestines negative. In my opinion the said J. R. came to his death from anesthesia combined with external violence and old age."

The coroner's verdict was that the man "came to his death from anesthesia combined with external violence and old age, said external violence the result of an accidental fall when the deceased was in an intoxicated condition, the anesthetic administered consisting of stovain, gr. 1 1/2; strychnin sulphate, gr. 1/60; sterile water, m. xlv."

Here is a case of an old alcoholic who dies less than an hour after the administration of a spinal anesthetic given in order to operate upon a serious injury consisting of fracture of the patella with great trauma to the joint and parts adjacent. The autopsy, as we have its records, shows no other cause of death, and so the coroner's physician concludes that the anesthetic contributed to the death. The shock of the operation must itself have contributed or may even have been the sole cause. The condition of chronic alcoholism may have contributed or may even have been the sole cause. Will the brain of an alcoholic always show marked macroscopic changes, especially when the examination of the brain is made a week after death? Again, the question arises whether this patient would not have died following the administration of any other anesthetic. On the day following another patient died on the table in the same amphitheater while under the influence of ether. What are the post-mortem evidences of poisoning by stovain, by cocain, by morphin, by ether, by chloroform? I do not mean the chemical or possible microscopic evidences, but the gross appearances.

The fatal result of our one case alone does not speak against stovain nor against spinal anesthesia any more than our seven or eight favorable cases in the County Hospital speak in favor of these procedures. Patients will sometimes die during or shortly after operations from various causes. It is not always possible to determine the actual causes in individual cases. Patients died before anesthetics were used, they die when ether is used, they die when nitrous oxid is used, they die when the surgeon has red hair, they die when he has a bald head, they die when he has seen the new moon over his left shoulder. No one factor, such as this or that anesthetic, can be justly blamed without scientific evidence.

It will do no harm to recall that the patient selected for the first administration of chloroform in the Royal Infirmary at Edinburgh died immediately at the first stroke of the knife. Because of the absence of Simpson, chloroform had not been administered, and so the new drug was spared that body blow of a death at first trial. In the Samaritan Hospital in Philadelphia recently a child was brought to the operating room for operation, and it was intended to administer stovain. For some good reason operation was postponed. Within a day or two the child came down with epidemic cerebrospinal meningitis to which it had been exposed. If stovain had been used it would have been difficult to convince some

people that the meningitis was not the result of the injection into the subdural cavity.

If a much larger number of patients undergoing operations of the same average severity die under stovain than die under other anesthetics, and if such a series embraces thousands of cases, then we must blame stovain and should give it up unless we can find something to administer with it which will neutralize its evil effects.

So far the literature does not furnish such an indictment against stovain. Grimond and Baudet[1] report 141 cases of stovain anesthesia with no pathologic sequelæ, although in a number of cases there were headaches, in a few vomiting and in one diplopia which lasted ten days.

Auvray[2] reports 51 cases. He lets out a small quantity of cerebrospinal fluid, mixes it with his stovain to form a solution and injects it back again. He had no deaths. Once he had a case of syncope in a woman aged 77 years with an enormous ovarian cyst; once motor and sensory paresis of the lower half of the body for nearly a month but with complete ultimate recovery. Zweifel[3] reports its use for three years in Dresden with, in general, good results. He had no deaths caused by the anesthetic. Franz of Jena[4] in late years has used lumbar anesthesia almost exclusively, with one death, in a womnn aged 76 years with marked arteriosclerosis who succumbed after an operation for complete hysterectomy for cancer by the abdominal route.

Holzbach[5] reports on the value of spinal anesthesia for gynecologic operations. He bases his conclusions upon over 1,000 cases of lumbar anesthesia. For absolute freedom from pain during the whole operation he gives preference to general narcosis; he considers the relaxation of the muscles ideal under the spinal method; as to danger and post-operative discomfort he considers that the occurrence of trophic disturbances is to be conceded but that they may be hindered by right technique; as to influence of the anesthetic upon the post-operative outcome he concedes the greatest superiority to lumbar anesthesia.

Avarrfy of Budapest[6] reports 50 cases from the University Frauenklinik, 45 times for abdominal operations, nine of which were Werthein's hysterectomies for cancer of the cervix. Anesthesia failed completely twice; in one case there was failure of respiration which required ten minutes of artificial respiration to revive the patient; vomiting and temporary incontinence of feces were frequent. In general he is pleased with the results of the method. In these cases stovain was combined with adrenalin.

Engelhard of Utrecht[7] had experience with stovain in 100 cases. In 30 cases the anesthesia was not complete and small amounts of ether or chloroform were used. No patient had any lasting symptoms following the injection, although in one there were severe symptoms of collapse one and one-half hours afterwards. Borzéky[8] of Budapest reports 300 cases of stovain spinal anesthesia. Ninety per cent. had complete anesthesia; 4 cases showed severe respiratory symptoms; about one-third had some difficulty with the bladder; 60 cases were observed for about five months afterwards, and 5 of these had some weakness and paresthesia of the legs with dizziness and headaches. No deaths are recorded. He considers that the secret of the results is in the technique.

Münchmeyer[9] reports the use of stovain anesthesia in 1,000 cases. He is an enthusiastic friend of the method, and deems its dangers no more than those of general narcosis. In some instances he made several injections in the same patient in one week, even within three days, without bad results. Six pregnant

1. Grimond et Baudet: Provénce medical, 1907, No. 27.
2. Auvray: Gaz. med. des Hôpiteaux, 1908, No. 61.
3. Zweifel: Zentralbl. für Gynäk., 1909.
4. Franz: Ibid.
5. Holzbach: München. med. Wchnschr., 1908, No. 28.
6. Avarrfy: Orvosi Hetilap, 1907, No. 30.
7. Engelhard: Monatschr. f. Geburtsh. u. Gynäk., B. xxvii, H. 6, 1908.
8. Borzéky: Ibid.
9. Münchmeyer: Beitr. zur klin. Chir., B. lix, H. 2.

women and three diabetics took it well; a fourth diabetic died afterwards in coma, not as a result of the anesthetic. Twenty-one cases already albuminuric did well. Anesthesia failed in a little over 2 per cent. of the cases; 4.4 per cent. vomited during or after the operation; 8 cases had headache which diminished quickly after lumbar puncture. There were four deaths; one the diabetic already mentioned, one of respiratory failure in a case of lung disease (whether from inspiration of pus was not determined because no autopsy was permitted); two other cases from causes not related to the anesthetic. Góth[10] had experience with 72 cases using doses of 7-8 cg. stovain, mostly in Billon's ampoules. In 5 cases anesthesia failed; in nearly half the cases there was nausea, vomiting, heart symptoms, or headaches; in two cases death ensued shortly after the injection in spite of administration of oxygen and stimulants. These patients each had inoperable ovarian carcinoma with ascites enough to seriously impair respiration beforehand. The author recommends the method for operations other than short ones in which only a small amount of ether or chloroform would be required.

Pringle of Glasgow[11] remarks on the use of stovain in 100 cases. He is well pleased with the method. Four times there was considerable shock after the operation; nausea, vomiting, and headache were not severe nor frequent, although the patients seemed to complain afterwards of pain in the wound rather more than after general narcosis. There was one death, due to the condition of the patient and not to the anesthetic. Barker[12] reports on his clinical experience with stovain in 100 cases. Thirty-eight times he employed Chaput's formula which is: stovain 10 per cent., sterile salt 10 per cent., with a specific gravity of 1083 +. Once he used Bier's solution which is: stovain 4 per cent., salt 11 per cent., suprarenin 0.01 per cent., with a specific gravity of 1058. Sixty-one times he made use of a solution of his own devising which is: stovain 10 per cent., glucose 5 per cent., with a specific gravity of 1030. In his first 50 cases he failed to achieve complete anesthesia 11 times but not once in the second 50. In the 100 cases there were 3 deaths from other causes than the anesthetic.

Remenâr, Budapest,[13] used stovain in 40 cases, tropocain in 36 and novocain in 4. In one case, that of a woman aged 72 years, operated on for inguinal hernia, slight symptoms of collapse occurred one hour after the operation under stovain. Otherwise there were no serious symptoms and no deaths. Headache yielded readily to aspirin. The patients were well relaxed and did not get excited. Skrobansky, a Russian,[14] reported 50 cases of spinal anesthesia, 25 with stovain (17 with addition of adrenalin) and 25 with tropocain. He thought that the anesthesia was more deep and lasting with the latter than with stovain. The after affects of both were much more favorable than with general narcosis, especially under chloroform.

Thorbecke[15] had 180 cases of spinal anesthesia, 107 of which were with stovain. In all the results were good. The Trendelenburg posture could safely be employed after ten minutes. Krecke[16] used stovain in 25 cases of various kinds of operations. Several of the patients had severe and many had slight headache after the operations. He had one death under the following circumstances: A man, aged 70 years, with an immense strangulated inguinal hernia and beginning signs of intestinal obstruction was operated on. The opening of the sac revealed gangrenous intestine. Just as the ring was being cut the patient collapsed and died shortly afterwards in spite of efforts. At the puncture the needle had withdrawn fluid stained red. No autopsy was permitted so that it cannot be certain that stovain caused this death. In the discussion Gebele[17] reported 47 cases of the use of stovain. Most of the patients had slight headache or backache and 6 vomited.

10. Góth: Gyógyászat, 1908, Nos. 38-40.
11. Pringle: Brit. Med. Jour., July 6, 1907.
12. Barker: Ibid.
13. Remenâr: Wien. klin. Wchnschr., 1907, No. 43.
14. Skrobansky: J. akuksch e jentsch, 1907, 1-9.
15. Thorbecke: Monatschr. f. Geburtsh. u. Gynäk., xxv, 967.
16. Krecke: Ibid. 247.
17. Gebele: Ibid.

There were no permanent evil results. Hofmeier[18] reported 100 cases of stovain anesthesia, 60 of them for laparatomies and 40 for vaginal operations. There were no permanent bad results. Thirty required a little ether to complete the anesthesia; a few times there was slight temporary paresis of the eye muscles.

Jonnescu[19] reported 480 cases of use of stovain with strychnin. There were no deaths and no dangerous symptoms; headaches occurred in 9 per cent.; vomiting in 8 per cent.; pain in the back in 3 per cent. Duration of the anesthesia was from 1 to 1½ hours. Children seemed to take the anesthetic well. He mixes the stovain solution with the strychnin fresh before each injection.

Jonnescu[20] later reports on 783 cases of spinal anesthesia by his peculiar stovain solution done by himself or his hospital interns and assistants. None of them died from fright, shock or anything else. None showed any signs of puncture of the cord. As for abscess due to the injection into the spinal canal, none occurred in his cases. I may add that I have found no mention of abscess of the cord in a fairly wide review of the literature. Jonnescu says, "This may happen to a careless surgeon, who had better give up surgery."

Gauss of Freiburg[21] in his last 1,500 cases of stovain anesthesia with improved technique had no untoward results. He discusses Rehn's experiments on animals with the drug. Rehn thinks that the drug is disseminated throughout the spinal canal and cerebrum within half an hour on account of an active fluid current in the cerebrospinal cavities. Gauss contends that the anatomy of the spinal canal in man is much different from that of dogs and other animals on which Rehn experimented. The canals of dogs and monkeys are relatively much less capacious than those of men and contain relatively much less fluid. Therefore in a dog which has only 7 to 8 c.c. of fluid in all, if 1 or 2 c.c. of other fluid be added there is much more disturbance than in man with the same quantity of injection.

Gauss found that the specific gravity of the fluid injected had much to do with its dissemination. In experiments on the cadaver he found that, with the body in the sitting posture, the injection of a solution of stovain of high specific gravity caused the drug to reach only the lower portion of the subarachnoidal sac. On the contrary, a solution of low specific gravity was disseminated even to the brain. Stovain seems to have an affinity for living nervous tissues, less for dead. It becomes "anchored" in the cord itself, therefore less is left in the cerebrospinal fluid. He injects between the second and third lumbar vertebræ a heavy solution of stovain and, with the woman still in the sitting posture, punctured between the fourth and fifth vertebræ. The fluid drawn from the latter point in half a minute showed much less stovain than that from the higher puncture and in five minutes a very small amount. He recommends a solution of low specific gravity for operations above the pubes and one of high specific gravity for operations on the perineum and legs. Examinations by Spielmeyer in a man who had received a dose of 0.07 gr. of stovain showed no degenerating nerve changes.

Birnbaum[22] reports the history of a patient, aged 53 years, who was operated on for prolapsus uteri and died three days afterwards with severe cerebral symptoms. In life she showed little sign of arteriosclerosis, but on autopsy the vessels of the brain, both large and microscopic, showed extensive disease. There were also numerous soft areas in the substance of the hemispheres and fresh areas in the pons. The author concludes that a direct toxic action of the stovain on the brain tissue cannot be ruled out in addition to its vasomotor action.

Spinal anesthesia is not without its advocates in American literature. I quote from the preliminary report of the Anesthesia Commission of the American Medical Association:[23] "Spinal anesthesia is gaining constantly a broader and more favorable recognition. One of our collaborators

18. Hofmeier: Ibid, 566.
19. Jonnescu: Ref. in Zentralbl. f. Gynäk., 1908, 1438.
20. Jonnescu: Letter to Med. Times, February, 1910, p. 52.
21. Gauss: Zentralbl. f. Gynäk., 1909, p. 1070.
22. Birnbaum: München. med. Wchnschr., 1908, No. 9.
23. Anesthesia Commission A. M. A., 59th Session; Trans. Section on Surg. and Anat. A. M. A., 1908.

states: 'It is my belief that it has come to stay and will always, in certain cases, prove safer and more satisfactory than any general anesthetic which we now have. I have used it since 1900 in cases where I have seen a clear contraindication to both chloroform and ether, and I have as yet no occasion whatever to regret its use. In all, I have used it 150 times, and have statistics of more than 1,000 cases without a death. While my experience with cocain sterilized by the fractional method was entirely satisfactory, I have given it up for stovain, on account of theoretical considerations. We have had less post-operative nausea and headache with stovain. Every patient on whom spinal anesthesia has been used, with the exception of one, a diabetic aged nearly 80 years, whose leg I amputated, recovered. He died many days afterward in the usual way of diabetic coma.'"

The most favorable article I have found concerning spinal anesthesia is one by W. Wayne Babcock of Philadelphia.[24]

The work is based on 658 personal cases of the method, mostly with stovain. The ages of the patients varied from nine months to eighty-eight years; the operations were of many kinds, including 355 laparotomies, 20 operations on the kidneys and ureters, etc. In about 2 per cent. of the cases a small amount of ether or chloroform was needed. The author states that he uses spinal anesthesia because he believes it safer than ether or chloroform. He believes the mortality from ether and chloroform has been much underestimated. With these drugs the danger increases with the time and with the quantity. Long operations become more and more dangerous as the patient absorbs more and more of the drug by inhalation, while with stovain the danger is greatest at the beginning of absorption, afterwards diminishing as the drug becomes eliminated. Often the pulse at the end of operation is better and stronger than at the beginning. There is also greater quiet on the part of the patient and there is more complete muscular relaxation.

Babcock never injured the cord at least enough to cause any symptoms or physical signs; there were no cases of meningitis; nausea and vomiting were rare when the dose was less than 6 centigrams. In his 658 personal cases and over 200 cases under Steel[25] of the Samaritan Hospital in Philadelphia and other colleagues, amounting in all to nearly 900 cases, there were two deaths. One was a patient who came to the operating table moribund from typhoid perforation, and the other was a patient whose leg was amputated for extensive progressive gangrene.

Strauss[26] reports a series of 20,000 cases from German sources in which the rate of mortality was 1 in 2,524.

From the foregoing I think it will appear that the use of stovain by the spinal method for anesthesia in surgical operations in properly selected cases is not entirely indefensible. At least, it has been tried enough in other places and the results are promising enough, especially under the latest improved technic and with the latest improved preparations of the drug, to justify some of us here in Chicago who have fairly large surgical clinics in giving it a further trial. I think I have shown that stovain is not, as stated by Warren H. Hunter, coroner's physician of Cook county, a "medical gold brick" not used by "careful and conservative practitioners."[27] I think I have also shown that the mortality is not

24. Babcock: Pennsylvania Med. Jour., 1909, p. 891.
25. Steel: Ibid.
26. Strauss: Ref. Ibid.
27. Hunter: Chicago Daily Tribune, Jan. 16, 1910.

nearly as high as estimated by E. C. Dudley,[28] of Chicago, who states his belief that "it will produce a mortality of 2 per cent."

In contrast to the very public and decided opposition to stovain in Chicago, I ask permission to quote from an editorial in the *British Medical Journal*,[29] commenting upon the death of a house painter, aged 72 years, suffering from a very enlarged prostate, diseased heart and lungs, who died during an operation under stovain anesthesia: "No therapeutic agent capable of absolutely abolishing pain can ever be absolutely safe. In this case the safest of known local analgesics was properly chosen and sympathy is to be extended to Dr. MacCormac in the matter."

The unfortunate and ill-advised publicity attending the fatal case which I have reported will perhaps discourage further use of stovain in this city for a while. If so, it will be unfortunate. While I do not wish to be considered a partisan of stovain or of spinal anesthesia, yet I do wish to keep a receptive mind in the matter, and I would wish to be able to do my little part in attempting to prove by the only good test of such things—clinical experience—whether stovain is an anesthetic which the judgment of time will approve.

SOME ADVANCE IN THERAPEUTICS.*

C. M. Riley, M.D.
ALTON, ILL.

When one looks at the usual methods of treatment of many diseases a few years ago in the light of recent researches in physiology and physiologic chemistry, he is surprised both at the crudeness and empiricism of the methods, and the success of the treatment in many cases. It was a sort of hit-or-miss process, almost entirely empirical, but accompanied by keen observation, and, although almost nothing was known of the *modus operandi* of the remedy or the pathology of the disease, the fact that the remedy gave relief in one case caused its continued use in other like cases until it proved its worth or worthlessness. If every physician in these later days would watch closely and carefully every manifest effect of every remedy he uses and make his results and conclusions known without prejudice or favor, the power and certainty of curing disease would be tremendously increased. But what is the actual state of the case? Some physician, more enthusiastic than his fellows, or who may have unusual opportunities to attract the attention of the profession, gives extravagant praise to some remedy which he happened to give coincidently with the rapid recovery of his patient due to other causes. Immediately the item is caught up and published broadcast, and, although hundreds of physicians, by reason of that praise, have used the remedy and found it worthless, they do not take the trouble to tell of its failures, so the recommendation goes on and the remedy is probably included in the next work on materia medica and therapeu-

28. Dudley: Ibid, Jan. 18, 1910.
29. Editorial, Brit. Med. Jour., 1909, I, 362.
* Read before the Madison County Medical Society, Granite City, Ill., March 4, 1910.

tics without any careful examination, and becomes official simply from lack of interest in calling attention to its failures or limitations.

Then the remedy, if not already proprietary in some form, is taken up by some enterprising manufacturer and exploited for all it is worth (and generally much more). Therein lies the cause of much of the therapeutic nihilism of to-day. Physicians are themselves largely to blame for this. Why do we usually rely more implicitly on the recorded observations of English physicians as published in English journals than many of those published in our own country? Because entrance into the profession is more strictly guarded there than in almost any other country on the globe and physicians there are usually of a class that weigh carefully their conclusions before giving them to the public. Would that it were more so in this country. I fear that most of those whose opinions are valuable are too modest to give them unasked, thereby delaying real progress in therapeutics. Every physician finds it necessary to try dozens of new remedies, most of which prove to be worthless, thereby often losing valuable time and doing his patient great injustice. The "house organ" evil is one of the greatest obstacles to real therapeutic progress, although many of them claim to be devoted to that especial mission. Their cheapness, their testimonials from so-called prominent and well-known physicians (whose names are only known through such advertisements) and their pseudoscientific nomenclature unfortunately influence many physicians whose scientific attainments should be such as to enable them to detect the absurdity of their claims. In this connection I might say that the Council on Pharmacy and Chemistry of the A. M. A. is doing an excellent work in sifting out the absolutely fraudulent preparations, recognizing those which have any basis of truth as to their chemical composition and pharmaceutical identity, but by no means substantiating their therapeutic claims, with which the council has nothing whatever to do, leaving that entirely to the physician and pharmacologist.

A late copy of one of our drug journals gives a list of 127 drugs, most of them so-called synthetics (a few true synthetics, but most of them merely mixtures), which have appeared during the year 1909 with the favorable testimonials of supposedly reputable physicians and teachers. It is not at all likely that one-tenth of these will stand the test of time, and they do not represent by any means all that have been advertised. It is a well-known fact that the older physicians, those with large experience and close observation, have always gradually reduced their armamentarium until it comprises comparatively few remedies, and this should be a lesson to younger physicians who wish to attain professional success.

"Be not the first by whom the new is tried, nor yet the last to lay the old aside" is very good advice. It has been prophesied by one of Germany's most eminent teachers (Professor Tschirch) that when medical science has thoroughly ruined its digestion with synthetic remedies and tested all the organs of the human body it will return once more to medicinal plants and drugs and employ them to a greater extent than it does at present. I do not quite agree with Professor Tschirch that all

synthetics and all preparations of organs will eventually be abandoned, as I believe we have a few that have established their usefulness and possibly a few more that will find their proper places when physiologic chemistry has advanced far enough so that we may know their true action, and enthusiasm has so far subsided as to limit their use to their proper field. Empiricism must very largely control the adoption of new remedies for some time yet, as we have not reached a point where we can foretell with any degree of certainty what specific action a remedy may have by a knowledge of its chemical composition, although we are advancing in that direction with increasing rapidity. Within the last few years several colleges have established chairs devoted to pharmacodynamics, occupied by men whose business it is to study the effects of drugs and other remedial agencies, not only on the human system in health and disease, but also on lower animals for the sake of comparison and proof. A phenomenon viewed from two points often gives a more accurate perspective than from one alone. In this way many important contributions to our therapeutic knowledge have been made. The influence of the internal secretion of the pituitary body on the growth of bony tissue and the antagonistic effect of parathyroid secretion, the well-known vasoconstricting action of adrenalin (or epinephrin) and the less well-known opposite effect of thyroid secretion might be mentioned.

The researches now being carried on have given rise to numerous theories, but have established some facts which have an important bearing on the future of the practice of medicine. Serum therapy, for example, came as a direct result of reasoning on some of the principles and facts derived from chemical investigations. The principle was established that ferments were weakened and destroyed by the products of their own activity. Alcohol in a certain concentration weakens and destroys the yeast ferment which produces it. When the chemist discovers the actual composition of an antitoxin it will be a comparatively short step to its artificial production. It is almost within the memory of men now living that the first artificial production of a substance which was recognized as distinctly organic was accomplished. Now it is almost an every-day affair, but it is yet confined principally to the more or less stable products of plant life, but we are gradually and somewhat rapidly approaching the time when the more unstable and complex products of animal life will be understood and prepared. Alcohol is now produced artificially (synthetically) without the aid of the yeast ferment, although the process is too expensive to be a commercial success. An epinephrin is now made which has the astringent qualities of adrenalin, but not quite so powerful (about 1/10), as we have not been able yet to introduce the methyl radical in the proper position.

The exact composition of the proteid molecule has so far eluded the chemist, but we hope soon to conquer it. The researches of Ehrlich have shown that certain albuminoid principles of vegetable origin (ricin from castor bean and abrin from jequirity bean) have properties very similar to toxins in that they induce the production of antitoxins in the blood. The chemical character of the opsonins is not known, but no doubt will

be known eventually, and a long step in the progress of therapeutics will be made.

No one who does not follow closely the advances in chemistry can clearly comprehend the rapid strides the investigators are making in this direction. Occasionally an epoch-making discovery is made, often by accident. The discovery of radium is a case in point, and it will probably be a long time before its true uses and limitations are known. Another discovery, just announced, which bids fair to open the way for the artificial production of alkaloids and other active principles of plants, was made by accident during an analysis of turmeric to find just what constituted its coloring matter. No doubt you all remember the circumstances attending the accidental discovery of saccharin. The discovery of the laxative property of phenolphthalein (which promises to be extremely useful) was due to the cathartic action of wines in which it had been placed for the purpose of coloring them. It is said that Pasteur's discoveries in relation to ferments originated in his observation of the effect of bacterial action on racemic tartrate of ammonia.

It might be mentioned parenthetically that the chemist does not often attach his name permanently to his discovery after the manner of some of his medical brethren, as, for instance, Murphy's button, McBurney's point, Fowler's solution, antrum of Highmore, etc.

The research chemist needs but the slightest opening wherein he can insert his wedge in order to pry open the secrets of Nature. I sometimes fear that the average physician does not give due credit to the modest chemist whose unobtrusive work aids him so materially in his efforts to alleviate the sufferings of humanity, but gives the credit and the financial returns to the enterprising but not always scrupulous manufacturer who takes the result of these labors and exploits them with many flamboyant embellishments. I believe much of this is due to the lack of instruction in the underlying principles of chemical science in our medical colleges. Physicians are not, as a rule, familiar with the necessarily complicated nomenclature of modern organic chemistry, complicated because of the vast number of compounds that must be named, but which, when understood, convey definite information as to their structure. How many would clearly understand what I mean, for example, when I say that the toxicity of certain anilin derivatives varies with the position of the methyl group in the molecule, whether in the ortho, meta or para position and the modification and disappearance of the toxicity by the introduction of a haloid in the para position? Yet these are important if one is to clearly understand the therapeutic action of these agents. Proprietary manufacturers take advantage of this unfamiliarity to foist upon physicians articles which would not for a moment stand the scrutiny of the educated chemist.

In this connection I would like to refer to the U. S. P. and N. F. The U. S. P. is a book which was originally prepared by physicians and for physicians, but which has gradually drifted into the hands of the pharmacists, wholly, I think, through the neglect of the physicians. It was originally intended to be a concise description of those drugs which the experience of physicians had proved to be of real merit, excluding all

secret preparations and inert drugs; in short, to be a list of reliable drugs to which the physician might refer with confidence. I know of no book that would be more useful to the physician of to-day if it were continued according to the original conception. The trouble with most of our works on materia medica and therapeutics is that, like garden-seed catalogues, they speak of each article with equal enthusiasm, and the inexperienced physician is bewildered, while the man of experience knows that some of them are practically worthless, and the rest are of varying grades of usefulness, comparatively few bearing the stamp of thorough scientific investigation. Early in the history of the Pharmacopeia it became evident that the help of the chemist and pharmacist must be called in in order that the identity, purity and strength of the various drugs could be established. In the meantime many of our medical colleges were turning out doctors with a very inadequate knowledge of material medica and almost no knowledge of chemistry or pharmacy, so that the preparation and identification of drugs fell almost entirely into the hands of the pharmacist. The preparation of the Pharmacopeia has consequently been in their hands for several decades, although they have repeatedly urged the physicians to tell them what drugs they wanted so they could be included. Physicians were so indifferent to these requests that the only thing left for the pharmacist to do was to learn as best he could from his prescription files what drugs were used to the greatest extent and incorporate them in the Pharmacopeia, giving as far as possible tests for their identity and purity. The manufacturing firms were not idle and sent out their more or less plausible literature until many doctors got practically all their knowledge of materia medica and therapeutics from these advertisements and from detail men and have almost lost sight of the book which should be their authority, as it is prepared by men known for their scientific training and reliability and for the express purpose of insuring the physician that he will get exactly the drug that he prescribes and in its state of greatest purity and uniform strength.

The care and scientific accuracy used in the selection and preparation of drugs according to the rules laid down in the Pharmacopeia have led the government to establish it as the authority in that field.

It is now up to the physicians of the country to make known to the committee in charge of the revision just what changes they want made, what drugs they have found really useful that are not already included and what ones have been found useless that they may be dropped from the list. The convention meets in Washington, D. C., next May to formulate rules and appoint the committee which has charge of the revision. Having been a member of the American Pharmaceutical Association for more than ten years, I have had frequent occasion to meet the men who are active in preparing the book and *know* that they are earnest in their desire to serve the best interests of the physicians. The N. F. is a sort of supplement to the Pharmacopeia, giving directions for the identification and preparation of many drugs and compounds which are not used to the large and general extent required for introduction into the Pharmacopeia.

The newly developed ultra-microscopic method of observing the action of bacteria on the blood cells has done much to clear up the pathology of many diseases and has shown us where to apply our treatment and how to prevent them. The same method of observation has shown us that much that we have heretofore been accustomed to attribute to that unknown agency, vital force, may be accounted for by chemical action taking place within the cell, the so-called secondary respiration, for example. The minuteness of a blood cell might make it difficult for one to comprehend how much in the way of a chemical reaction could take place in it, but when we remember the *extreme* minuteness of the average molecule we have no difficulty in realizing that a blood cell might easily contain hundreds of millions of them undergoing all sorts of chemical changes. We know that oxidation and other metabolic changes continue within the cell long after ordinary respiration ceases, and so long as the blood brings the proper materials the changes go on indefinitely. When we learn to introduce the proper material into the cell to bring about the desired reaction, then will our therapeutics reach its goal. I believe that much of the future therapeutic progress will lie in the direction of the accurate knowledge and control of intercellular chemical reactions, for these lie near the origin of all life and energy.

We know that colloids which have not the power to pass through animal membranes, and, therefore, cannot pass through the cell wall, may become changed to crystalloids by combination with certain inorganic salts without necessarily changing the composition of the original colloid, and, on being freed from its inorganic compound, may become colloid again and thus be retained in the cell until needed for nutritive or other purpose. This may explain, partially at least, why the alkalinity of the blood is so necessary to health and even life. Enzymes which are colloid in their nature are thus inactive in the cell until the proper reagent comes along to free them.

That various cell structures have their individual affinities for certain drugs is well known, and advantage is taken of this fact in many ways. The assimilation of foods according to the affinities of the different cells has not been so well understood, and I believe that much progress is now due in the therapeutics of diet. The human machine will only work smoothly and perfectly when all its parts are not only properly adjusted, but when kept in the best condition. Nature's army of defense must be properly fed and taken care of. The food must be adjusted to the individual needs of the various parts of the machine. Many physicians still direct the diet of their patients as if the digestive system of every one was constructed on one invariable plan, and any defect or disarrangement was always in exactly the same spot. The chemistry of foods and the changes which they undergo in the process of cooking (which is only a variety of chemical reaction), it seems to me, are worthy of much study, and I am glad that many of our schools are taking up this subject. It is one in which the physician should be deeply interested, as the combination of the management of the diet *with* the administration of medicines often produces our best therapeutic results; in fact, it is often

necessary in order that our medicines shall have their desired effect at all.

Perhaps I need only mention the precipitation of alkaloids by alkaline stomach contents and their subsequent solution and absorption on the occurrence of acidity from any cause, thus producing unexpected or even cumulative effects. It may be recalled that the classic experiments of Beaumont on Alexis St. Martin, upon which most of our tables of relative digestibility of different foods are based, were made upon the stomach alone without considering that any digestion could take place in any other part of the primæ viæ.

Much stress has of late been placed on the necessity of thorough mastication. I notice that our honored chief chemist, Dr. Wiley, contends that this can be overdone, as rapid absorption is not always synonymous with healthy nutrition, on the supposition probably that the digestive organs must be given some normal exercise in order to remain healthy.

The therapeutics of posture has been emphasized by a recent writer, who maintains, with good reason, that the posture which entails the least strain on the various organs enables them to perform their functions and is, therefore, conducive to a longer and healthier life.

EYE SYMPTOMS IN DIABETES.*

H. Gradle, M.D.

It has been noted by all experienced clinicians that eye lesions occur frequently in diabetic patients, at least to the extent of 10 per cent., and in some statistical records, based on longer observations, even in more than 25 per cent. An analysis of case-records shows that the longer the disease has lasted the greater the probability of an eye complication, especially cataract. In private ophthalmic practice about 1 to 2 per cent. of patients have diabetes. It is not uncommon to have diabetes suspected for the first time on the basis of the eye symptoms.

There are some eight to ten different types of eye lesions observed in diabetes, occasionally in combination. I will pass them in review briefly with comments on their peculiarities.

Persistent and relapsing styes or even furuncles of the lids, while not common, are an occasional evidence of the lowered resisting power to pyogenic infection in diabetes.

Iritis, also an infrequent complication, may present characteristic peculiarities of diabetes. Generally one-sided, it is sometimes rather slow to disappear. Occasionally it leads to fibrinous or even a purulent exudate in the anterior chamber, which latter is otherwise rarely seen in non-traumatic iritis. It ends in recovery probably in all cases.

Weakening and at times even paralysis of the power of the accommodation is not rare in diabetes. A failure of accommodation not accounted for by the age, especially if of rapid development, ought to

* Read at the meeting of the Chicago Medical Society, Jan. 19, 1910.

suggest a urinalysis. This condition may improve, if the diabetic process can be controlled by diet.

There are on record a small number of striking observations in which the refraction of the eye changed from one to three diopters within a very short time in diabetic patients. In most of the instances reported it was an abrupt development of hyperopia, but in some cases, too, it was, on the contrary, a sudden occurrence of myopia or increase of pre-existing myopia. The only plausible explanation of these rare occurrences is a change in the refractive index of the lens.

The most common eye complication of diabetes is cataract. Diabetes should always be thought of when opacity of the lens develops in both eyes in middle life, progresses steadily and sometimes rapidly, and is not accounted for by pre-existing disease of the eye or trauma. In most instances the opacity is the same as in senile cataract, but in a small minority it appears characteristic of diabetes in the form of diffuse bluish haze of the anterior layer of the lens with well-defined radiating lines indicative of the segmental arrangement of the lens fibers. The progress of cataract can be checked if the disease is controllable by diet. When this is not the case the opacity continues to increase steadily, though not always at a uniform rate.

While diabetic cataracts have been removed satisfactorily by all ophthalmic surgeons, some have been impressed by the greater danger of the operation in diabetics. A large statistic record last year by Uhthoff has not borne out this impression. His results were not inferior to the average obtained in non-diabetic subjects, but he admits the greater probability of delayed healing caused by transient iritis. In the discussion at the Heidelberg Ophthalmic Society following Uhthoff's paper, most operators agreed with the good prognosis of the operation, even when sugar is present and no dietary restriction has been adopted. It is, however, common surgical experience that diabetic patients are always endangered by general narcosis, particularly from chloroform.

The most characteristic of diabetic eye lesions is retinitis. There is one type especially which permits the recognition of diabetes by means of the ophthalmoscope, viz., the occurrence of white spots varying from large roundish dots to small irregular figures scattered diffusely over the retina but not extending to the periphery, and usually intermingled with minute hemorrhages. In other cases the hemorrhages predominate and attain larger proportions. The disease is said to be always bilateral, but I have personally seen it one-sided in one instance. It is slowly progressive unless the sugar can be entirely abolished. In one undoubted instance of this kind I have seen complete recovery. But even when not arrested it does not destroy sight entirely. The greatest danger in the more pronouncedly hemorrhagic form is the sudden complication by acute glaucoma, usually of a malignant character. Unlike albuminuric retinitis the involvement of the retina in diabetes does not signify a bad prognosis for life.

The life of the diabetic is seriously threatened, however, when his sight is impaired by retrobulbar neuritis. This singular affection is prac-

tically identical with the disease brought on in non-diabetics by chronic alcohol and tobacco poisoning. In both events it is a disease of those fibers of the optic nerve which supply the central area of the retina, and in both cases it leads to partial atrophy of that nerve tract, if not checked in time. Before actual atrophy has occurred, it cannot be recognized with the ophthalmoscope. It dims central sight only, gradually increasing until reading becomes entirely impossible. The diagnosis can easily be made by testing for a central scotoma, especially with colors. It seems to occur only in patients whose disease cannot be controlled by diet, and hence its damages can usually not be undone, though perhaps its progress may be somewhat retarded by proper control.

Other affections of the optic nerve—neuritis and atrophy—have also been observed occasionally in diabetic patients, but not in any frequency or any other manner characteristic of diabetes. A not uncommon complication met with are palsies of one or the other external eye muscles, usually ending in recovery. It may also be stated that hemorrhages, while not particularly frequent in any one locality except the retina, occur besides in the conjunctiva, in the anterior chamber after cataract operation and in the vitreous to a sufficient extent to suggest that diabetes favors the rupture of ocular blood-vessels.

THE DIAGNOSIS AND TREATMENT OF PLUMBISM.*

BERNARD FANTUS, M.D.
CHICAGO, ILL.

Plumbism is, next to alcoholism, the most common form of chronic poisoning. Inasmuch as errors in the diagnosis of plumbism are frequent and the treatment, once the diagnosis is made, is generally very efficient, it seems that this condition may still merit a share of your attention.

In the diagnosis, the history of exposure to lead is, of course, of importance, the following trades being most likely to produce plumbism: lead mining and smelting, the manufacture of white lead and lead colors, of lead pipes and other lead objects, of pottery and earthenware, of electric storage batteries; also painting, plumbing and printing. Nevertheless it must be remembered that lead poisoning may occur in people in whom exposure to lead may not even be suspected, as in a seamstress who developed plumbism from biting off the ends of black thread that was found to contain lead, or in a teamster who ingested the lead by habitually drinking the first glass of beer drawn from lead pipes in which it had been standing over night; furthermore, it must be remembered that lead workers may suffer from other diseases besides those due to lead. A brother of mine, a printer by occupation, was supposed to suffer from lead colic, when the condition was one of intestinal intussusception, from which he finally died. Hence the diagnosis of plumbism must be based upon other facts than mere exposure, and such are found in the characteristic signs and symptoms of plumbism.

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* Read before the Chicago Medical Society, Jan. 26, 1909.

I would first like to call your attention to the fact that plumbism is a general, not a local disease; that one portion of the body is never exclusively affected, and that, while the manifestation of the disturbances of any one organ may predominate, careful search will nearly always show involvement of other organs. It is also important to recognize the fact that the disease shows a tendency to evolve itself in a certain order; that, for instance, affection of the nervous system is hardly ever first to appear, that it is usually preceded by colics, and that these are practically always preceded by certain gastro-intestinal and general manifestations.

The earliest symptoms of plumbism are usually vague digestive disturbances, such as loss of appetite, eructations and feeling of pressure after eating, coated tongue, offensive breath, and a peculiar taste sensation that is often described as sweetish or metallic. Experienced patients can often tell the reappearance of their trouble by the occurrence of this taste sensation. Absence of hydrochloric acid has, within recent years, been discovered in quite a proportion of chronic cases. How early it appears and to what extent it is responsible for the indigestion of plumbism still remain to be determined. The bowels are practically always constipated, the constipation being of the spastic variety, and quite resistant to cathartics.

Another early symptom of plumbism is pallor, sometimes in excess of the anemia, evidently in part due to vascular spasm. There is a reduction in both the number of red blood corpuscles and in the hemoglobin. The stained blood film frequently shows a few nucleated red cells, and, what has of late created special interest, basophilic granules in many of the erythrocytes. It is stated that pernicious anemia is the only other disease in which basophilic degeneration of the red blood cells is as marked, which in this disease is accompanied, however, by various other evidences of hemic degeneration that are absent in plumbism. It seems that the ordinary polychrome methylene blue stains are unsatisfactory for the purpose of bringing out this basic granulation of the erythrocytes, and that prolonged staining with hematoxylin and eosin is required.

The blue line in the margin of the gums, when present, is of great value in the diagnosis of plumbism; its absence does not exclude lead poisoning, for in the formation of this line two factors are necessary, namely, lead in the blood circulating through the gums and hydrogen sulphid produced by putrefaction in the crevices between teeth and gums. The line is, therefore, frequently not found in mouths that have been kept scrupulously clean, while its absence in an ill-kept mouth is of considerable weight against the probability of plumbism. The line is sometimes so faint that a hand lens may be needed to discover it; it is often best marked about the incisors and canines of the lower jaw, most especially in the portion of the gums between the teeth. To distinguish it from black deposit on the teeth, a small slip of white paper may be pushed between the edge of the gum and the teeth.

The colic, which occurs after these premonitory symptoms have existed for some time, is merely an acute exacerbation of the spastic condition of the bowels. This spasm is most probably due to paralysis of the

splanchnic nerves, which are the inhibitory nerves of the automatic ganglia of the intestinal wall. Having passed dry hard stools of very small caliber for some time, the patient finally becomes completely constipated, and often quite suddenly at night most violent attacks of abdominal pain set in, which are aggravated by the cathartics that the patient usually takes in the vain hope of relieving himself. The physician often finds the patient pacing the floor or sitting bent over with his fists pressed into the abdomen. Each paroxysm of pain usually lasts less than a quarter of an hour, is followed by an interval of partial relief, but is succeeded by recurrences of the violent pain, which may be accompanied by nausea and vomiting. While the pain may be located anywhere in the abdomen, it most commonly centers about the umbilicus. The abdomen is usually retracted and not very sensitive. It is frequently claimed that tenderness does not exist; indeed, that pressure relieves the pain. This, however, is not always the case and we occasionally find patients with general or localized hyperesthesia of the abdomen. Nevertheless comparative indifference of the patient to mechanic disturbances is one of the characteristic features of this condition. Thus changes in position do not influence the pain as they do in inflammatory or ulcerative conditions, in which the patient will lie still, in marked contrast to the restlessness of the patient suffering from lead colic. While flexion of the thighs upon the abdomen gives relief, the patient will flex both thighs, not the right thigh only, as he would in appendicitis. The most important distinguishing feature, however, is the absence of marked general disturbances. The pulse is usually slow, of rather high tension. There is no fever; the temperature is more likely to be subnormal. There is no sweating, even with the most violent paroxysm. Indeed, comparative indifference to mechanic disturbances, afebrile course and absence of leucocytosis are our chief aids in distinguishing this condition from appendicitis and peritonitis. I know of a number of cases in which patients suffering from this condition have sacrificed their appendix to diagnostic error.

In the intestinal crises of locomotor ataxia, pains identical with those of lead colic may occur; they are, however, accompanied by diarrhea, which is very rare in plumbism. Testing of the patellar and of the pupillary reflexes ought to prevent error. It must always be borne in mind that plumbism may be complicated by appendicitis, gastric ulcer, nephrolithiasis, or other painful abdominal condition.

A patient who has once had lead colic should give up his lead work; otherwise the colic is almost sure to return; and, what is worse, more serious manifestations will certainly make their appearance.

Closely allied to lead colic and often appearing at about the same time are vague neuralgic pains, which occur in paroxysms and may appear in almost any part of the body. Paresthesia and anesthesia also occur. Tremor, which may resemble the tremor of paralysis agitans, is quite frequent. The most important and most characteristic of all the nervous symptoms of plumbism, however, is paralysis of the extensor muscles of both hands, producing, when fully developed, the bilateral "wrist drop." While as a rule, one hand is affected several days before the other, and the paralysis in one hand is often more marked than in

the other, the affection is practically always bilateral. This and the fact that the paralysis is purely extensor, the flexor muscles not being impaired, that it nearly always spares the supinator longus, and usually the long abductor of the thumb, that there is no disturbance of sensation as a rule, and that rapid atrophy and reaction of degeneration make their appearance, are almost distinctive of plumbism. However, unless the paralysis has been preceded by colic, the diagnosis of plumbism should be made with caution, as colic precedes the paralysis in over 93 per cent. of cases. While the musculo-spiral nerve is the one most commonly affected, sometimes involvement of other nerve territories occurs, so that in any neuritis plumbism must be thought of.

As paralysis usually incapacitates the worker from pursuing his occupation, it carries with it the prime necessity for cure by removing the patient from further exposure to the poison. One would think that people who have passed through such suffering and disability would give up an occupation that produced it. Still, so great is our tendency toward the direction of least resistance that many of these workers return to their occupation as soon as they are able. It is in such cases most especially that we see the graver forms of plumbism with degeneration of brain, kidney, or both. It is especially in combined alcoholism and plumbism that cerebral and renal lesions are most prone to develop.

Plumbic encephalopathy may appear in acute as well as in chronic form. Epileptiform convulsions, delirium that sometimes resembles delirium tremens, and coma are the most common and striking manifestations of the acute form which is very dangerous, being fatal in perhaps one-fourth of all cases. The chronic form resembles general paresis, is, however, usually atypical and often ends in recovery. The following nervous disturbances should suggest search for chronic poisoning, especially alcoholism and plumbism: 1. Epilepsy occurring for the first time in later life. 2. Affections of the nervous system that cannot well be classified among any of the typical nervous diseases.

There can be no doubt that lead is capable of producing genuine chronic interstitial nephritis, which may develop stealthily in the course of years, giving us no warning until the degeneration is far advanced. Arteriosclerosis, cardiac hypertrophy, uremia, apoplexy, may all occur in connection with it. Plumbism also seems to produce a predisposition to gout.

The finding of lead in the urine is positive evidence of lead poisoning. A negative result, however, means nothing, as lead is practically never found in the later stages of plumbism, though it is usually present in the earlier stages. The search for it should be undertaken after giving potassium iodid for a few days. In testing for lead in the urine, the organic matter must be oxidized by heating about 500 c.c. of urine with 50 c.c. of hydrochloric acid and 2 or 3 gm. of potassium chlorate, then driving off the chlorin and concentrating by evaporation. If now a stream of hydrogen sulphid is passed through the filtrate, and it produces a black precipitate, plumbism is rendered highly probable; and made certain, if, after having caught the precipitate on a filter, washing it and then dissolving it in nitric acid, the resulting solution produces a white

precipitate with sulphuric acid and a yellow precipitate with chromic acid. When urine is sent to a laboratory to be examined for lead the physician should send at least a quart, see to it that it is slightly acidulated and that it be put in flint glass bottles immediately on passing.

THE TREATMENT OF PLUMBISM.

In the prophylaxis of plumbism cleanliness is the master word. As this requires the observance of a great many details, and as these details are usually not observed unless they are enforced by law, I will leave this portion of the subject with the plea that our country may follow the example of the European countries, most especially of Germany, in regulating these dangerous industries. It may be advantageous to point out, however, that ingestion of lead is by far the most important method by which lead is introduced into the system, and that it is the dirty, lead-reeking hand of the workman that contaminates his daily food. Careful scrubbing of the hands before eating, or still better, the wearing of rubber gloves, would do a great deal to lessen plumbism. To lessen the absorption of the ingested lead, sulphuric acid lemonade, the free use of milk, and of fats have each perhaps some little value, but not enough to be depended upon.

The three indications in the curative treatment of plumbism are: 1, To stop the introduction of the poison into the system; 2, to favor its elimination; and 3, to antagonize the disturbances produced by it.

1. To stop the introduction of the poison, usually means prompt change of work, not only temporarily, but permanently. An individual who has once suffered from lead poisoning is extremely susceptible to its recurrence, and recurrence in an aggravated form.

2. In favoring the elimination of lead, our first care should be to obtain free evacuations of the bowels, two or three a day, which are sometimes difficult to obtain owing to the obstinate constipation present. It is a mistake to use in this condition purgatives that act largely upon peristalsis. The salines, and among them most especially magnesium sulphate, should be used in large and frequent doses. The action of the purgative can best be reinforced by the administration of atropin which antagonizes the intestinal spasm, and the use of large oil enemas which are as useful here as they are in other forms of spastic constipation. After the bowels have been freely opened, and not until then, potassium iodid should be given in doses of 5 grains (0.3 gm.) three times daily. Its exhibition should be accompanied by the free use of water. How it acts is a matter of speculation, but that it acts is certain. Anything that increases metabolic activity favors the elimination of the deposited lead. Sweat baths with or without the use of sulphids are useful. A sulphur bath may be obtained by dissolving six ounces of potassium sulphuret in half a tubful of water. But, above all, does daily work in the sweat of the brow, preferably out of doors, answer the indication; and this is the kind of work we should advise our patients to take up, at least for a while.

3. As to the symptomatic treatment, little needs to be said. In the control of lead colic, the essential thing is to obtain evacuation of the bowels, which is best accomplished as already indicated. The use of hot

applications to the abdomen and the hypodermic administration of morphin cannot, however, be dispensed with. While the administration of iodid should not be commenced early in a patient who is just recovering from a severe colic, as it may precipitate its recurrence, I have found that its use in lesser pains of plumbism is almost specific in relieving them. In the anemia of plumbism, arsenic and iron must be used very sparingly, as either may aggravate some of the ill effects of the lead; the arsenic, the tendency to nerve degeneration, and the iron the digestive disturbances and the constipation. Another agent that reinforces the deleterious action of lead is alcohol, which, therefore, must be absolutely forbidden. As the symptomatic treatment of the paralysis of the cerebral and the renal conditions of plumbism does not differ from that of the same condition due to other causes, I will not discuss them here.

NEGLECTED SOURCES OF INFECTION.

JAMES CASEY, M.D.
CHICAGO.

Incessant care and watchfulness are essential to the preservation of health from the cradle to the grave. These facts have been frequently made manifest to the writer, who for many years has been a close observer of the various manners in which infection and disease may be communicated to human beings through the careless and flagrant manner in which articles of food are exposed and handled from the time they leave the producer until they are placed on the table for consumption.

The more this matter has been investigated the more apparent becomes the fact that it is a subject germane to prophylactic medicine, and any work tending to throw light on it will doubtless assist ultimately to a better understanding of the important rôle that these sources play in the transmission of micro-organisms of disease. The laws and ordinances that obtain at the present time are inadequate. In cities a practical demonstration may be seen any day by walking along the street or in visiting the shops. To see unwrapped bread tossed into dirty wagons or baskets like stove wood, handled with gloves that also serve as handkerchiefs or carried in the arms, rubbing against soiled clothing and sprayed with the secretions of mouth and nose, or stacked upon counters like bricks to be patted, thumbed or punched by the dirty hands of all comers, is not an uncommon sight.

The soiling of this class of food that on account of its nature cannot be washed or cleaned is doubly pernicious and should be rigidly guarded against by proper wrappings from the time of production until delivered to the consumer. In regard to our milk supply it is surprising, in view of the fact that many efficient laws have been passed and enforced bearing on hygiene and sanitary science, and the vast amount of good and effective work that has been done by individuals, societies and municipal bodies to raise the standard of purity and quality of the milk supply, how little attention is given to protect the container from contamination, or, what

is more vital and practical still, to warn the consumers against the danger from the container that still exists, although the contents of bottle or can at time of filling might have been of the highest standard of quality and purity, unless the container is thoroughly scrubbed and cleaned before opening. It is more essential now than ever before that this matter should be brought at once to the attention of consumers, on account of the sense of security into which they have been lulled by the successful and energetic work that is being done to furnish a pure and wholesome milk supply, viewing with entire confidence the innocent-looking milk container that may be loaded on its external surface with millions of death-dealing germs of disease that subsist on the tissues of man. Inquiry has determined that in many instances, in fact usually, milk containers are not cleaned before being opened. In one instance the party interrogated in regard to this matter presented a picture of mild astonishment and said, "Why, no; I thought the health department attended to that." The most economical and practical way to bring this important hygienic matter to the attention of consumers is to oblige producers or dealers to have a suitable notice printed on the bottle cap and the can properly tagged, warning consumers against this danger. The additional expense, on account of this requirement, would be so slight as to be scarcely worthy of consideration.

In climates where the temperature is below the freezing point the contents of milk bottles should not be allowed to freeze, for by so doing the caps are forced up on a cone of milk and cream, rendering its contamination doubly sure, not alone from the containers, but also from other sources, such as air and dust, also dogs and cats, that are frequently the carriers of dangerous diseases. When the cone of milk melts down it bathes the caps and lips of the bottles, washing the impurities into the contents.

In order to determine the correctness of my conclusions and bring to the attention of all what the writer believes to be a prolific source of disease and attract others, who have more time for laboratory work, to this field, a number of examinations were made, both macroscopically and bacteriologically. Inspection showed that in many instances both cans and bottles were very dirty. The close examination of the crease, running up to the bottle lip and under the lip, was frequently filled with a very hard substance, suggesting that it had survived at least one washing. In one instance a direct smear, made from a characteristic coating on cap and lip of bottle, showed microscopically micrococci catarrhalis, staphylococci and pneumococci. Numerous cultures made from caps and lips showed the same organisms, but not always together, excepting in one instance. In this instance the picture presented was the same as that derived from a throat culture from a patient complaining of soreness in the postnasal space, namely, micrococci catarrhalis, staphylococci and pneumococci. Cultures made from neck and body showed the same organisms, but less frequent, and a great abundance of hay bacilli, the latter bacilli being frequently present in all the cultures both top and body. The colon bacillus was found in one culture made from the body. No cultures were

made from cans. The source of many of these micro-organisms is undoubtedly due to hand and glove contact and the "spraying process."

Now the question arises, if easily demonstrable micro-organisms are present, may not also some of the more difficultly demonstrable micro-organisms also be present, and may not this be a prolific source of entrance to homes of whooping cough, measles and the much-to-be-dreaded scarlet fever? If the *Micrococcus catarrhalis* that thrives in the nasal and throat secretions of human beings is present, why may not some of the other micro-organisms that are frequently found there also be present, such as influenza, diphtheria and the tubercle bacillus? If the *Bacillus coli* is present may not also the *Bacillus typhosus* be present, and if these micro-organisms are present on milk bottles there is ground for a reasonable presumption that they are also present on the bread that we eat.

5326 Lexington Avenue.

MEDICAL SOCIETY NOTES.

The regular meeting of the McLean County Medical Society was held March 3. The following paper was read: "The Relation of the Medical Profession to the Non-Medical Practitioner," Dr. A. L. Fox; discussion, Drs. F. C. McCormick, H. W. Elder and T. D. Cantrell.

Tazewell County Medical Association met in Pekin, April 12, and elected the following officers: President, Dr. Harry V. Bailey, Pekin; vice-president, Dr. Harley A. Zinzer, Washington; secretary, Dr. Fernando C. Gale, Pekin; delegate to the state society, Dr. Henry L. Yoder, Morton, and alternate, Dr. Eugene F. Kelchner, Delavan.

At the regular meeting of the Rock Island County Medical Society, held in New Harper, April 12, the following officers were elected: President, Dr. Henry S. Bennett, Moline; vice-presidents, Drs. Warner L. Eddy, Milan, and Joseph E. Asay, Rock Island; secretary, Dr. Albert N. Mueller, Rock Island; treasurer, Dr. Arthur T. Leipold, Moline.

The Logan County Medical Society held its annual session and elected officers March 31. The officers for the year are: President, D. M. Perry, Broadwell; first vice-president, Dr. C. C. Montgomery, Lincoln; second vice-president, Dr. C. C. Reed, Lincoln; secretary, Dr. H. C. Oyler; treasurer, Dr. A. M. Sargent. One new member was received, Dr. C. B. Caldwell, assistant superintendent of the Lincoln state school and colony. Dr. C. Rembe was appointed delegate to the meeting of the state medical society.

OFFICIAL PROGRAM

Of the Sixtieth Annual Session of the Illinois State Medical Society, to be held at Danville, May 17, 18, 19, 1910.

ORDER OF PROCEEDINGS.

Registration office on the stage of the Armory, Walnut Street, between North and Harrison, one-half block from the Convention Hall.

TUESDAY—FIRST DAY—AFTERNOON

3:00. Call to order of Secretary's Conference (Ferra Hall), by C. H. Lovewell, Chicago.

EVENING.

8:00. Call to order of the House of Delegates by the President, J. L. Wiggins, in Ferra Hall, North Street, between Walnut and Vermilion.

WEDNESDAY—SECOND DAY—MORNING.

9:00. Call to order in general session by the President in the Woman's Club Rooms, North Street, between Walnut and Vermilion, J. L. Wiggins, East St. Louis.

Invocation, Rev. Walter Aitken, pastor First M. E. Church.

Address of welcome, Louis Platt, Mayor.

Address of welcome, Benjamin Gleeson, President Vermilion County Medical Society.

Response on behalf of the Society by the President.

Report of the Committee of Arrangements by the chairman, Stephen C. Glidden.

Announcements by the President.

9:30. Call to order of the sections for the reading and discussion of the papers of the program, in the Woman's Club Rooms.

1:00 p. m. Adjournment for luncheon.

AFTERNOON.

2:00 p. m. Call to order. Continuation of Scientific Program.

6:00 p. m. Adjournment.

EVENING.

8:00. Music, to be followed by calling to order by First Vice-President, C. U. Collins, Peoria, First M. E. Church, corner Vermilion and Williams Streets.

President's Annual Address, J. L. Wiggins, East St. Louis.

Oration in Surgery: "Surgical Aspect of Cancer, with a Further Report on the Hemolytic Test," George W. Crile, Cleveland, Ohio.

Oration in Medicine: "The Future in Medicine," Charles G. Stockton, Buffalo, N. Y.

Public Reception is to follow above addresses to be held in the church and followed by light luncheon in the church supper room.

THIRD DAY—THURSDAY—MORNING.

8:30. Call to order. Continuation of sectional work.

12:00. Noon. Call to order of Medicolegal Committee (Ferra Hall), by Harold N. Moyer, Chicago.

1:00. Adjournment for luncheon.

AFTERNOON.

2:00. Continuation of sectional work.

4:00. Call to order in General Session by the President to receive report of House of Delegates.

Induction of President-elect.

Final adjournment.

NOTE.—The chairman of the Committee on Entertainment of the Ladies has made preparations for a luncheon on Wednesday at the Golf Club Grounds. Automobile ride on Thursday and a reception at the residence of Mrs. Stephen C. Glidden. A luncheon for medical women will be given by Mrs. Stephen C. Glidden, Thursday, at 1 p. m., at 422 North Vermilion Street.

SECTION ONE.

Chairman.....W. H. Gilmore, Mt. Vernon
Secretary.....Frederick Tice, Chicago

SECTION TWO.

Chairman.....S. C. Strummel, Macomb
Secretary.....Dean D. Lewis, Chicago

Oration in Surgery: "Surgical Aspects of Cancer, with a Further Report on the Hemolytic Test," George W. Crile, Cleveland, Ohio.

Oration in Medicine: "The Future in Medicine," Charles G. Stockton, Buffalo, N. Y.

1. The Medical Treatment of the Pelvic Diseases of Women, from the Standpoint of the Surgeon, J. F. Percy, Galesburg.

Discussion opened by Clifford U. Collins, Peoria.

2. Observations in Two Thousand Blood Examinations for Hemameba Malariæ, T. M. Aderhold, Zeigler, Ill.

Discussion opened by A. R. Edwards, Chicago.

3. Some Diabetic Obiter Dicta, S. T. Robinson, Edwardsville, Ill.

Discussion opened by R. T. Woodyatt, Chicago.

4. Unusual Case of Appendicitis, George N. Kreider, Springfield.

Discussion opened by A. D. Bevan, Chicago.

5. The Leucocyte in the Diagnosis, Classification and Prognosis of Pulmonary Tuberculosis, J. F. Hultgen, Chicago.

Discussion opened by E. H. Butterfield, Ottawa.

6. Fat Embolism, with Report of a Fatal Case, E. A. Graham, Chicago.

Discussion opened by Allen B. Kanavel, Chicago.

7. The Technic and Value of the Wassermann Test in the Diagnosis and Treatment of Syphilis, W. T. Mefford, Chicago.

Discussion opened by F. G. Harris, Chicago.

8. Blastomycosis (Illustrated), A. M. Stober, Chicago.

Discussion opened by Oliver Ormsby, Chicago.

SYMPOSIUM ON DISEASES OF THE JOINTS.

9. The Bacteriology and Pathology of Joint Infections, E. E. Irons, Chicago.

10. Acute Infections of Joints and Their Mechanical and Surgical Treatment, J. B. Murphy, Chicago.

11. Neurological Considerations of Joint Diseases, Archibald Church, Chicago.

12. Joint Diseases, from the Orthopedic Standpoint, John Ridlon, Chicago.

13. Bile-Tract Infection, J. E. Coleman, Canton.

Discussion opened by R. H. Babcock and D. N. Eisendrath.

14. Pellagra, George W. Webster, Chicago.

Discussion opened by L. G. Pollock, Dunning.

15. Persistent Infections in Specific Urethritis in Relation to the Penile Urethra, B. C. Corbus, Chicago.

Discussion opened by Louis Schmidt, Chicago.

16. Ectopic Pregnancy, with Report of Fourteen Cases, E. C. Franing, Galesburg.

Discussion opened by J. Clarence Webster, Chicago.

17. Recent Contributions to Our Knowledge Concerning Sympathetic Ophthalmia, E. V. L. Brown, Chicago.

Discussion opened by Dr. R. C. Matheny, Galesburg.

18. Fracture-Dislocation of the Atlas and Axis, Carl E. Black, Jacksonville.

Discussion opened by J. B. Murphy, Chicago.

19. The Rationale of Infections of the Nasal Accessory Sinuses, William L. Ballenger, Chicago.

Discussion opened by M. S. Marcy, Peoria.

20. A Practical Measure in the Prophylaxis of Postoperative Cystitis, E. C. Dudley, Chicago.

Discussion opened by Emil Ries, Chicago.

21. Bacteriemia, with Special Reference to Endocarditis, Edward C. Rosenow, Chicago.

Discussion opened by B. W. Sippy, Chicago.

22. Endocarditis, R. B. Preble, Chicago.

Discussion opened by J. B. Herrick, Chicago.

23. Early Efficient Surgical Treatment of Skull Fracture, F. E. Schurmeier, Elgin.

Discussion opened by C. D. Center, Quincy, and F. A. Besly, Chicago.

24. Gastro-Intestinal Infections, J. W. Van Derslice, Chicago.

Discussion opened by John Q. Roane, Carlyle.

25. Symptoms and Treatment of Exophthalmic Goiter, Cassius C. Rogers, Chicago.

Discussion opened by J. W. Hamilton, Mt. Vernon, Carl B. Davis, Chicago. W. E. Walsh, Morris, will show during the discussion a Cretin Presenting Symptoms of Hyperthyroidism.

PSYCHOPATHIC SYMPOSIUM.

26. The Study of Mental Disorders, H. Douglas Singer, Hospital.

27. The Borderline Psychoneuroses, E. L. Crouch, Jacksonville.

28. The Prevention and Treatment of Insanity, Eugen Kohn, Anna.

Discussion opened by Frank P. Norbury, Kankakee.

29. Tuberculosis of the Ear, Throat and Nose, Arthur E. Prince and W. G. Bain, Springfield.

Discussion opened by C. W. Lillie, East St. Louis.

30. The Relations and Clinical Significance of the Urinary Acidity, Henry R. Harrower, Chicago.

Discussion opened by Frank Billings, Chicago.

31. A Dressing for Colle's Fracture, R. J. Christie, Quincy.

Discussion opened by Carl E. Black, Jacksonville.

32. Report of Two Cases of Acute Perforating Gastric Ulcer Requiring Gastrojejunostomy as a Secondary Operation, J. E. Allaben, Rockford.

Discussion opened by M. L. Harris, Chicago.

FOURTH ANNUAL SECRETARIES' CONFERENCE.

C. Hubart Lovewell, President.....Chicago.
Marion K. Bowles, Vice-President.....Joliet
D. G. Smith, Secretary.....Elizabeth

Current Medical Literature and How to Use It, Carl E. Black, Jacksonville.

The Secretary, E. W. Feigenbaum, Edwardsville.

What the President Can Do to Make the County Society a Success, A. E. Bulson, Jr., Editor of THE JOURNAL of the Indiana State Medical Society.

The Secretary's Part in the Organization of the Medical Profession; Is It Worth While? J. F. Percy, Galesburg.

The presidents of county and district societies and the members of the Judicial Council are cordially invited to be present and take part in the discussion.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

GENERAL OFFICERS 1909-10

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MAY, 1910.

THE STATE BOARD OF HEALTH AND CRIMINAL ADVERTISEMENTS IN THE CHICAGO DAILY PRESS.

At the annual meeting of the Chicago Medical Society held June 19, 1907, Dr. G. W. Webster, President, in the chair, the committee on criminal abortion, composed of Drs. Holmes, Bacon and Nagle, reported that the committee had been successful in suppressing all objectionable advertisements in the daily press of Chicago. This had been accomplished by harmonious cooperation between the committee, the Coroner and States Attorney. After giving an interesting account of the work of the committee, the report concludes with the statement that a "stop order" had been issued by the Postmaster General against a certain number of individuals and institutions, who were declared professional abortionists or fictitious firms.

In the September, 1907 issue, page 399, of the Monthly Bulletin of the Illinois State Board of Health, appears a statement evidently written by Secretary Egan, in which all the credit for the action of the Post Office Department, in these cases, is taken by the State Board of Health. The list printed in the State board publication corresponds almost ex-

actly with that of the committee. Absolutely no mention is made of the work of the committee of the Chicago Medical Society, but on the contrary, the secretary makes the following misleading statement in one paragraph:

"It is probable that the name of 'Dr.' Gordon Francis, alias 'Dr. D. Dunn,' of the 'Dr. Dunn Medical Institute,' of the *Inter-Ocean* building, who was prosecuted recently by the State Board of Health, and fined one hundred dollars ($100) and costs, will be added to this list. Full particulars concerning this man's methods of practice have been furnished to the postal authorities, who have given assurances to the State Board of Health that if it can be proven that fraud has been practiced in any of the so-called 'medical institutes' the mail of the offender will be stopped at once, and publications containing advertisements of the person or institutes will be barred from the mails.

"While it is not within the power of the State Board of Health to prevent the operation of medical institutes conducted by licensed physicians, the board can successfully prosecute any unlicensed practitioner who is shown to violate the law, and the board can, likewise, summarily end the practice of any physician, who is known to practice under the name of another physician."

The last sentence of Secretary Egan's statement is of special interest because one of the advertisers barred from the mails by the Post Office Department at the time was one E. J. Dennis, 163 State Street, Chicago. Dr. Dennis was licensed by the Illinois State Board of Health in 1900. If Dr. Dennis was guilty of the charges made by the Chicago Medical Society and the United States Post Office Department, there would seem to be no reason why his license should not long since have been revoked by the Illinois State Board of Health, under the law of 1899.

It appears that the secretary of the State Board of Health, in a manner characteristic of him in this, as in many other instances, took unto himself credit which was altogether due other persons. We recently communicated with Dr. Holmes, and received from him a communication which appears below and which shows conclusively the methods of Secretary Egan:

DR. HOLMES' LETTER.

CHICAGO, April 22, 1910.

My Dear Dr. Kreider:—By some mischance your letter was mislaid, and just now discovered. The State Board of Health took no position in the investigation of the abortionists. The board was not asked to lend us aid, neither did it initiate any action so far as I know, towards the suppression of the abortion evil. The results accomplished were due absolutely to the unaided efforts of the committee on criminal abortion of the Chicago Medical Society. After the evidence was produced the post office department took action.

When an allied committee investigated midwives I visited the president of the board, Dr. G. W. Webster, asking that our investigator be

appointed by, or empowered to represent, the board. The matter was put up to Dr. Egan, and the then attorney of the board—promises were made, but finally we concluded as the appointment was deferred and deferred we should proceed independently. In the investigation of the midwives the board did not offer or aid us in any manner.

(Signed) Yours truly, R. W. Holmes, M.D.

SECRETARIES' CONFERENCE.

Fourth Annual Conference of the Secretaries of the Component County Societies of the Illinois State Medical Society, Danville, Illinois, Tuesday, May 17, 1910, at 5 p. m.

The following program will be presented to a joint conference of the Secretaries and Presidents of County and District Societies and the members of the Judicial Council:

Current Medical Literature and How to Use It.
By Dr. Carl E. Black, Jacksonville.

The Secretary. By E. W. Feigenbaum, Edwardsville.

What the President Can Do to Make the County Society a Success. By A. E. Bulson, Jr.
Editor of The Journal of the Indiana State Med. Soc.

The Secretary's Part in the Organization of the Medical Profession; Is It Worth While?
By J. F. Percy, Galesburg.

Special thought has been put on arranging this program with the idea of furnishing to every member timely, vital and propelling ideas in regard to society organization and direction.

Every secretary has problems to meet peculiar to his own district, but a general idea and plan of society work furnishes a large field for thought and discussion.

As every secretary knows, a large part of the active work of any medical society gravitates to his shoulders, and it is with the purpose of comparing the methods used in different counties, districts and states that these conferences are held. In accordance with a generally accepted feeling that the presidents of county societies would also enjoy attending this conference, it has been thought advisable to include all these as well as the members of the Judicial Council.

The time has been so arranged as not to conflict with any of the scientific program, and it is hoped that every secretary will make a strenuous effort to be present.

The time is ripe, and we hope not far distant, when every county society will send its secretary to the State Meeting and pay his expenses. He should be the logical delegate in every instance. If he is willing to give the time and energy and brain necessary to make his county society a success, he should have his reward. Strange, if he is so all-important and

necessary at home that he is scarcely seen or heard from at the average State Meeting. So we ask, "Ought he not wear a delegate's badge?"

So, Brother Secretaries, if you love your work and are anxious, arrange your work so you can leave, get your think factory agoing and come to the meeting ready to tell us of your success, and if you have had failures (and who has not?) let us reason together as to WHY.

Let us have for our motto:

"HIGHEST SCIENTIFIC IDEALS, HARMONY, AND EVERY MAN A BOOSTER."

BUREAU OF THE MEDICAL SOCIETY OF CHICAGO.

Mr. John W. McMahon, manager of the bureau, submits the following statement of the history of the bureau, what it has accomplished and what it expects to do in the future.

This bureau interests not only members of the Chicago society, but all physicians in Illinois, as it can be seen readily how the system proposed can be extended to cover every community in the state. A large number of the physicians in the State have accounts from former patients now residing in Chicago, which can best be collected through this bureau.

For these reasons we take pleasure in giving space to Mr. McMahon's statement and hope it will be read by all our members.

To the Editor:—Over two years ago the Chicago Medical Society established the Bureau and have already spent thousands of dollars to accomplish for its members the same work done by the Leipsic Verbund for the medical profession of Germany. The experience gained by the bureau so far, shows that the organization must not only serve the Chicago Medical Society, but include the entire country in its operation.

With this end in view the name Bureau Chicago Medical Society has been changed to Bureau United Medical Societies, enabling the entire work to be operated under one head in such a way that the medical societies assume no financial responsibility, yet giving each society the advantage of experience gained and absolute protection of interests.

OBJECTS OF THE BUREAU.

1. The collection of physicians' accounts on a commission basis.
2. The printing of physicians' stationery, as letterheads, envelopes, cards, card indexes, file systems, etc., at nominal prices.
3. Department for buying, selling, exchanging medical practices, etc. at a reasonable commission charge.
4. Department for legal defense of physicians in malpractice suits.
5. To aid in maintaining a reasonable renumeration for life insurance examinations.
6. To assist in securing proper medical legislation.
7. To correct medical charity abuse.

In order that the bureau may be self-sustaining and develop along natural lines of business growth, each class of work must be undertaken singly and the details thoroughly worked out. The bureau has now under successful operation the Collection and Printing Departments. The Exchange Department will soon be established and the Defense in Malpractice Suits taken up as soon as the business expands into other states (the latter work now being done for the profession by the Illinois State Medical Society). Efficient service is now rendered in the Department of Medical Charity Abuse through the work of the Collection Department.

COLLECTION DEPARTMENT.

The books of the bureau in the general office may be audited at any time and must be audited at least once each year by an auditor appointed by the Chicago Medical Society and a report furnished the trustees of the society.

Before any branch office is established in any city, arrangements must be made with the medical society of the city or county in which the branch office is to be located for an audit of the books by the medical society.

The manager of the bureau shall at all times maintain adequate and acceptable bond for the protection of the Chicago Medical Society and all physicians who patronize the bureau. Whenever any branch office is established in any city, the bureau shall furnish and maintain adequate and acceptable bond to the local medical society.

All accounts are handled by bonded attorneys and collectors, of which the bureau already has over a thousand on its list, located in the United States, Canada and Mexico.

Any physician having accounts listed with the bureau or any of its branch offices may inspect the general ledger and examine the records and files concerning his personal business.

Reports are furnished each physician having accounts on file with the bureau every ninety days on the following dates: January 10, April 10, July 10, and October 10. Settlement shall be made with each physician on these dates for collections made during the preceding quarter.

All accounts are collected on a commission basis. While the rate of commissions may seem too high, experience has shown that good work cannot be done and settlements made promptly to the doctor for less.

The bureau now has accounts on file from over 1,000 physicians representing some $200,000 worth of accounts. Many of these accounts were of the worst sort when they were given the bureau for collection, accounts against persons who had been declared bankrupt, against persons long dead, against persons in prison and against persons whose whereabouts have been unknown for years. These accounts were accepted and worked out at great expense, so that the bureau learned to place certain restrictions on the sort of accounts filed. On the total accounts filed with the bureau there has been collected about $50,000, or 25 per cent. of the total amount filed for collection. This does not represent the correct proportion of

accounts being collected now. Accounts are now of a better sort and the experience gained is bearing fruit, so that in the time just past during which $25,000 worth of accounts were filed over $12,000 were collected, almost half of the bills being collected.

In the beginning there were many problems to solve before the work could be handled in any way near a perfect manner. A complete filing device which would quickly give us the information wanted in regard to any one of over 20,000 names was needed. The system had to be changed two or three times before our present perfect system was devised. We have at last adopted a numerical file giving the doctor a certain number and his debtor a number following, as: 26-1, 26-2 26-3 and so on. This gives us an elastic file to which accounts may be added from time to time without discord. Some such system was absolutely necsary, for we daily received remittances with nothing but the name to identify it. Occasionally nothing but the currency, an unsigned letter and the post mark as a clew to its ownership. Then, the problem of dividing the city into districts so that collectors could conveniently handle claims sent in has required no little thought and work to bring this feature to a practical working basis.

The first few months the printers' bills consumed more than our profit. To overcome this a printer was secured and about $500 invested in a press and type. This proved to be the thing needed. The bureau could now have everything wanted at less cost than originally was paid for the actual necessities. Not only this, but the doctors are giving us their printing, so that to-day the printing department, which is equipped with a battery of Gordon presses, occupying space 24x60 at 302 Thirty-fifth Street, is making as much clear money as the collection department, and the society will eventually be repaid for every dollar invested.

JOHN W. MCMAHON, Manager.

THE MOST CONSPICUOUS FAILURES OF MENTAL AND FAITH CURE TREATMENT.

As an ordinary rule, the members of the medical profession have not taken the trouble to combat the fallacies of the cults which have deluded their followers for many years with false statements as to the value of all the varied forms of "mental treatment," "suggestion," "encouragement," etc.; but every once in a while some authority who has witnessed the failure of these efforts is constrained to state some facts. The last and one of the most convincing statements comes from Dr. F. W. Langdon, Medical Director of the Cincinnati Sanitarium, who makes the following statement in the last annual report of that institution:

"Psychotherapy has come to be a word 'to be conjured with' to an increasing degree of recent years. Psychic treatment, otherwise known as mental treatment, suggestion, encouragement, etc., has always been employed, and always will be, with a varying degree of success in the treatment of all diseases. The personality of the physician and of the nurse; the surroundings; restraints, moral and physical, adapted to the

good of the patient; the regular and proper administration of foods, baths, exercise and medicines, all have their 'psychic' influence on the patient, and will continue to have, along with their equally important physical effects.

"The most conspicuous failures of all forms of 'mental treatment' when used alone have been in the treatment of the insanities. This, of course, was to be expected, since it is the 'psyche' of the patient that is needed to promote cure; and it is that 'psyche' which is unavailable by reason of the illness present. To ask a patient with the symptom aboulia—to use his 'will-power' which is absent, or a patient with delusion to 'be reasonable'—is much like expecting a watch to tell the time of day by its facial appearance when the 'works' have been sent to the jeweler for repair. To be sure, such a watch necessarily indicates the right time *twice daily*. So the patient may be 'right' for some hours daily *when asleep*.

"There is no specific treatment for 'diseases of the mind,' nor may we ever hope to discover such. Management of the patient is a matter which demands the exercise of the broadest medical knowledge and skill."

A CORRECTION OF MISSTATEMENT REGARDING THE UNIVERSITY HOSPITAL OF CHICAGO.

The Journal is pleased to publish in this issue a communication received from Dr. Bates in which he corrects a misstatement made in a letter received from him and published in the April issue. His first communication, as explained in his last letter, erroneously makes the statement that the Jenner Medical College had been affiliated with the University Hospital.

The Journal has no desire to unjustly misrepresent any organization.

Correspondence.

RECIPROCITY OF MEDICAL LICENSURE.

Springer, New Mexico.

To the Editor:—That the form of reciprocity adopted by the Illinois Board of Health is an unjust and unfair discrimination, and that it works an unnecessary hardship upon a certain class of Illinois physicians is certainly evident to any one who has given the subject any thought and especially so to one of this class who has attempted to take advantage of its supposed benefit. To the physicians of Illinois who registered prior to July 1, 1899, reciprocity is simply a snare and a delusion.

In discussing this subject it would be well to first take into consideration the object and purposes of medical legislation as it pertains to the legal right to practice medicine and surgery, also to consider the object

and purposes of reciprocity. As the States are clearly given the right to regulate the practice of medicine within their own borders by the Constitution of the United States it would certainly be superfluous to enter into a verbose discussion of that phase of the subject. It is fair to assume that the primary and ultimate object of medical legislation is to raise the standard of medical education and to protect the people from the practice of poorly qualified, unethical, and immoral practitioners. I think it is the generally accepted idea that the object and purpose of reciprocity is to carry out this fundamental principle of medical legislation and at the same time to enable a physician residing in one state to move to another state with the minimum amount of trouble in proving to the board of that state his qualification and fitness there to practice. If qualification—both educationally and ethically—is not to be the sole standard by which the applicant is to be judged then the matter of reciprocity assumes a different phase. And if one is to judge from the attitude of some of our State Boards, merit is not the only criterion by which the physician is judged. For instance, some boards announce that they will reciprocate with other states who will do so with them. How this affects the applicant surpasses our feeble understanding, and is certainly retaliative and revengeful in character, and unbecoming the medical fraternity. No one who has the love of medicine at heart could advocate any form of reciprocity that tends to lower the standard of medical education and it would seem that no one who is in genuine sympathy with the medical profession would favor imposing any unnecessary expense and hardships upon the members. What we need is not an increase in the number of physicians but an increase in that genuine, true, fraternal spirit of justice that should predominate our profession. And I might say what we need on our state boards are men who are in accord with this spirit and who are willing to place merit above red tape and qualification above political preferment.

That there would be a difference of opinion upon the question of interstate reciprocity is but the natural sequence of the different requirements of the different states and of the different views taken by various people. The writer would surely be narrow and uncharitable if he were not willing to accord to any member of any state board the right to favor and advocate such measures as his judgment dictated. Dr. Egan, secretary of the Illinois state board, avers that all who favor a different form of reciprocity than that adopted by that board do so from purely selfish motives and that they are contemplating a change of location. If his philosophy is true that an advocate of a measure becomes selfish simply because he would be benefited by it, then selfishness not only reigns supreme in our land but it must be especially rampant in those states that reciprocate on any other basis. And furthermore our revolutionary forefathers were selfish in opposing the British tea tax; and their acts were selfish and not patriotic, their motives were avaricious and not prompted by a love of country. The writer was raised in the belief that it was a privilege of any and every citizen of this country to advocate such laws and measures as he pleased, but it seems as if he has

been woefully misled and that he had no right to question the powers that be without being branded selfish.

The sum total of the status of reciprocity is this, that the physicians of Illinois who registered prior to July 8, 1899 are disfranchised of the rights of reciprocity, and why? As stated before, if qualification is the sole standard of his rights, and if he is unworthy, very well, and no one should enter a complaint.

If it is true that his education and qualifications are such as to unfit him for this favor then it is certainly indeed a sad commentary upon this class of physicians. If, however, on the other hand, they are deserving, what has been their iniquity that they are made the mark of the board's displeasure.

Now as to the legal status of the case. Dr. Egan claims that the law will not permit him, or rather the board, to reciprocate on any other basis than that of an examination; but the following extract from the Bulletin of the Illinois State Board of Health, of August. 1906, will throw some light on the subject: "The Illinois medical practice act does not provide for reciprocity. The board reciprocates under its general powers, but only on licenses issued after examination, as the medical laws of Illinois require an examination." Now, if the law does not provide for any reciprocity at all, isn't it a little strange that they (the Illinois board) would find a way to reciprocate upon a basis to suit themselves? Furthermore, have they ever made any attempt to protect the physicians who registered before an examination was required, or have they willingly sacrificed their rights?

As to the practical workings of reciprocity. Dr. A, a graduate of a recognized medical college, but unfortunate in receiving his license before an examination, was required and after practicing in Illinois for ten or fifteen years, is obliged to change climates, and upon writing to the secretary of the board of a neighboring state, is informed that he can register there under qualification No. 2, but on sending his application blank for endorsement, to the secretary of the Illinois board, he finds out that the board of the other state was not competent to pass upon its own applicants and furthermore, he was surprised to find that his own state board didn't think him worthy of endorsement, for surely on no other grounds would it have been refused. Dr. B is a graduate of the same school as Dr. A, only a year or two later, but fortunately he received his license by examination and he can register by reciprocity in about seventeen different states.

Whence came all of this difference in the qualifications of the two physicians? If the Illinois Board would simply refuse to admit applicants on the basis of an examination it would not be so bad, but when they refuse aid or assistance to its own physicians it seems that they are exercising an autocratic power.

In conclusion I wish to say that I am not an applicant for license in any state, and further than that I never made an application in any state which was turned down, so I have no ax to grind.

E. I. Whitehead. M.D.

ANOTHER COUNTY HEARD FROM

Dr. Carl E. Black, Councilor, Sixth District, Illinois State Medical Society, Jacksonville, Ill.:

Dear Doctor:—Herewith are the answers to the questions asked by the Council of the Illinois State Medical Society in your letter of March 17, 1910, as voted unanimously by the Morgan County Medical Society at its regular meeting the 14th inst., twenty-five members being present:

1. Do your members endorse the position of the Council on Medical Education of the A. M. A. on the condition of medical education in Illinois as expressed from time to time during the last four years and especially at the Chicago conference, March 1, 1910? (See ILLINOIS MEDICAL JOURNAL, March, 1910.) YES.

2. Are your members in sympathy with the campaign for better medical schools and a more uniform standard of medical education which is being pursued by the Council on Medical Education of the A. M. A? YES.

3. Do you believe that the worthless medical schools of Chicago should be abolished if still found deficient after due notice to reorganize? YES.

4. Do you believe that too many poorly qualified doctors are licensed in our state? YES.

5. (a) Do you think one board (the Illinois State Board of Health) should continue to supervise both the public health and the affairs of medical education (determine the standing of medical colleges, and examine and license medical graduates), (b) or do you think more satisfactory results would be obtained by separate boards, as already exist in most states? (a) NO. (b) YES, and further, it is the sense of this society that the members of the Examining and Licensing Board should not be connected with any medical school.

6. Do you believe that the executive officer of the Illinois State Board of Health should be a trained sanitarian? YES.

Respectfully,

GEORGE STACY, Secretary Morgan County Medical Society.

JACKSONVILLE, ILL., April 15, 1910.

DR. BATES CORRECTS MISSTATEMENT.

GRACE HOSPITAL, CHICAGO, April 26th, 1910.

To the Editor:—I wish to apologize to you and the University Hospital for the erroneous statement contained in my communication of February 7, which was published in April JOURNAL.

Said statement that the Jenner Medical College had affiliated with the University Hospital was based on a misstatement of the facts, and through an unfortunate oversight the mistake was not corrected.

Trusting that my apology will be accepted, I am

Yours very truly, MORLEY D. BATES.

ADAMS COUNTY PASSES RESOLUTIONS ON MEDICAL EDUCATION

QUINCY, ILL., April 11, 1910.

To the Editor:—At the meeting of the Adams County Medical Society, held to-day, the following resolution was unanimously adopted, and I hasten to send it to you:

WHEREAS, It has been brought to the attention of the medical profession and the public by the Council on Medical Education of the American Medical Association, after two duly authorized and carefully conducted investigations of each medical school in every state, that the United States has almost as many medical schools as all other countries, and that many of these are little more than diploma mills, and that while Illinois has several medical schools which are equal to any in the country, she also has a larger number of lower-grade schools than any other state, and has been classed by said Council as one of "five especially rotten spots which are responsible for much of the bad medical instruction," and that on account of the large number of inferior medical schools this country is supplied with more than twice the number of physicians required or to be found in any other country, and that many of these were graduated from schools where it was impossible to secure an adequate medical education; therefore be it

Resolved, That we heartily endorse the work of the Council on Medical Education and promise our support to the carrying out of its recommendations.

Resolved, That we call attention of our State Board of Health, which is duly authorized under the laws of the State, to determine what medical schools are "not in good standing," to the serious conditions of medical education in Illinois, and request that in the interest of the public and of medical education in general, and especially of the medical interests of Chicago, which with proper support will become the great medical center of this country, that these conditions be corrected as soon as due notice can be given to the unacceptable schools; and be it further

Resolved, That in our judgment the cause of medical education in this state will be advanced by establishing a single board of medical examiners which shall be separate and apart from the Board of Health, whose duties are now so multiplied that none of its departments are up to the standard which a leading state like Illinois should maintain.

C. A. WELLS, Secretary Adams County Medical Society.

ANNUAL MEETING AT DANVILLE

DANVILLE, ILL., May 1, 1910.

Doctor:—Every indication points to a rousing state meeting in Danville. In reply to letters and printed announcements we have had many favorable personal letters.

If it is a question of attending either the state or national meeting, decide in favor of Illinois. Your state society confers special privileges and is active in its efforts on your behalf.

The program, you will find, is filled with papers by men of local and national reputation. Personal contact, so important to medical enthusiasm, is to be found in *your* next state meeting,

MAY 17TH, 18TH AND 19TH.

Make another effort to secure a new member for your local society.

Fraternally,

A. MERRILL MILLER, Chairman Publicity Committee.

STEPHEN C. GLIDDEN, General Chairman.

COUNTY AND DISTRICT SOCIETIES.

ADAMS COUNTY.

The December and annual meeting of the Adams County Medical Society was held in the Elks' club rooms, Quincy, Monday, December 13, with second vice-president Knox in the chair. Others present were Drs. Gilliland, Nickerson, Koch, Spence, Ball, Brenner, W. W. Williams, Ericson, Haxel, Bates, Whray, Christie, Center, Reticker, Gabriel, Pendleton, Rice, Collins, Pfeiffer, Shawgo, J. B. and Kirk, Kidd, Miller, Knapp, Pittman, Werner, Bloomer, Mitchell, Whitlock, Ashton, Hart and Wells. The usual minutes were read and the bills allowed. The illness of Dr. Jos. Fletcher, Mendon, being brought to the attention of the society, the secretary was directed to send him a Christmas letter of cheer and a remembrance of flowers. The secretary's report for the year 1908 was read and showed a membership in good standing of seventy-one. Four were dropped for non-payment of dues, two were lost by death. The secretary and treasurer of the library committee made their report, which showed a small balance in their hands after meeting the fixed charges. Adjournment at noon to the Hotel Newcomb was had, after which the election of officers occurred and resulted in Dr. D. M. Knapp, Mendon, being chosen president; Dr. T. B. Knox and Dr. F. T. Brenner were elected unanimously first and second vice-presidents, respectively; Dr. Wells, secretary, and Dr. Christie, treasurer, were unanimously reelected. Dr. James H. Pittman was chosen unanimously as a censor for a term of three years, and Dr. E. B. Montgomery was in like manner chosen a member of the library committee for a term of three years. At the conclusion of the election Drs. Gilliland and Christie were appointed as a committee by the president to escort President-elect Knapp to the chair, who, in assuming his office, made a neat, energetic little speech, in which he promised his best efforts in maintaining the present high standing of the Adams county society. The remainder of the afternoon was given over to short clinical reports, Dr. Gilliland reporting a case of birthmark and his treatment; Dr. Nickerson a case of morphinism treated by the "Towne" method recently publicized, and Dr. Koch a case of sclerema neonatorum in which recovery was obtained. Dr. Ashton read an able paper on "The Status and Duty of the Medical Officer," which elicited general discussion and brought forth a request that it be forwarded to the A. M. A. *Journal* for publication. Dr. Ashton having indicated that he would remove from the city within a short time, the president and members of the society, by a rising vote, wished him good luck and prosperity in his chosen field.

Adjourned.

CLARENCE A. WELLS, Secretary.

Regular Meeting, April 11, 1910.

The regular April meeting of the Adams County Society was held in the Chamber of Commerce rooms on the 11th. The entire day was given to Dr. John L. Porter's clinic at Blessing Hospital in the forenoon and his scientific address before the physicians in the afternoon. Among those present at the clinic and afternoon session were Drs. D. M. Knapp, president; Shawgo, J. B. and Kirk, Nickerson, Rice, Whitlock, Schullian, Ericson, Brenner, Johnson, Pittman, Gabriel, Bates, Hart, Pfeiffer, Reticker, Becker, Koch, Knox, Mercer, Ray and W. E., Shepherd, Ross, Montgomery, Ball, Bloomer, Gilliland, Center, Williams, Bierne, and Wells. Some of those present from other cities, Drs. Black, Jacksonville; Smith and Miller, Pittsfield; McConnell and Peacock, Baylis; O'Neal, La Grange, and Frame, Ewing. This is the third visit Dr. Porter has made to the Adams County, also the third clinic held. In interest and profit this clinic was the best of all.

Some sixteen or seventeen orthopedic cases were seen and examined, including cases of talipes, poliomyelitis, tubercular hip joints, arthritic deformans, flat foot, etc. Two cases were successfully submitted to operative interference. Somewhat past the noon hour adjournment from the clinic to the Hotel Newcomb was had for luncheon. In the afternoon the regular business of the society was transacted. The matter of the resignation of Dr. A. W. Meyer from the society was laid on the table, after a special committee had reported futile efforts made to get him to reconsider. It was reported that Dr. Meyer desired to engage in some lodge or contract practice. Resolutions favoring the proposed bill of Senator Owen anent the establishing of a department of health were read and passed, and copies thereof ordered sent to our representatives in Congress. Resolutions endorsing the stand and work of the Council on Medical Education of the American Medical Association were presented and unanimously passed. Dr. Porter was then introduced and took for his theme, "The Modern Treatment of Tuberculous Joints," and as the title indicates, so was the matter presented by this able expert and leader in his line. At the conclusion of the address a most hearty vote of thanks and appreciation was given Dr. Porter both for his address and clinic. He responded by voicing his pleasure at again being with his fellow members of the Adams County Branch.

A vote of thanks was given Miss Wheeler, the nurse, and the authorities for the privilege of holding the clinic in Blessing Hospital. The matter of instructing our delegate in regard to his vote on the proposed change of time for holding the state convention was held over until the next meeting. A committee was appointed to draft resolutions on the death of our former member, Dr. J. G. Williams.

Adjourned. CLARENCE A. WELLS, Secretary.

CHAMPAIGN COUNTY.

The regular monthly meeting of the Champaign County Medical Society was held April 14 at the University of Illinois, the program for the meeting being furnished by a committee of the university faculty. The society was called to order by Acting-President Johnson at the Bacteriological Laboratory at 2 p. m. A number of specimens illustrating tuberculosis, typhoid fever, trypanosomiasis and malaria, were demonstrated by Prof. T. J. Burrill and his assistants. This demonstration was concluded promptly at 2:50 p. m., and the society was conducted to the Chemical Laboratory, where an illustrated paper on "Metabolic Influence of Copious Water Drinking with Meals" and a second paper on "The Metabolism of Dogs Subjected to Repeated Fasting" were presented by Prof. P. B. Hawk, and a paper on "Nutrition" was presented by Prof. H. S. Grindley. Following the presentation of these papers, the laboratories and methods of the State Water Survey were demonstrated by the Director, Prof. Edward Bartow. This session was concluded promptly at 3:50 p. m. and the society was next conducted to the Laboratory of Physiology, where Professor McClellan and his colleagues demonstrated by experiment the action of adrenalin on the blood pressure of the dog, the fatal effects of air embolism, and protein poisoning and anaphylaxis in guinea pigs. Promptly at 4:25 p. m. the society was conducted to the Laboratory of Zoology, where Prof. H. B. Ward demonstrated a number of specimens from his collection of animal parasites. Microscopic preparations of the parasites of syphilis, kala-azar, and sleeping sickness, a number of the flukes, and various tapeworms were shown. A beautiful series of microscopic preparations illustrating the successive steps in the journey of the hook-worm larva, from its penetration through the skin to its final lodging in the digestive tract, was also demonstrated by Professor Ward. The series was one prepared by Professor Looss during his experimental study of this disease. At 5 p. m. the society was conducted to the University Club, where a buffet luncheon was served. Members present were Drs. T. J. Burrill, T. J. McKinney, Lucy Exton, T. J. Exton, J. J. Hanmore, H. C. Howard, Ellen Miner, Jennie Lyons, F. S. Diller, J. H. Alpiers, John Marten, S. S. Salisbury, W. Schowengerdt, T. A. Dicks, L. O. Sale, R. P. Dowd, J. G.

Lamb, C. S. Davis, J. Mandeville, G. W. Rice, D. Kirby, W. F. Burres, and C. F. Newcomb. Dr. Walter Scott of Foosland was present as a visitor. After a unanimous vote of thanks to the university committee for the afternoon's program, the meeting adjourned. N. M. BAKER, Secretary.

COLES COUNTY.

Coles County Medical Society met at the Dole House, in Mattoon, Ill., April 19, 1910, with President C. B. Voight in the chair. Minutes of the previous meeting read and approved. Under the head of unfinished business, Dr. Bennett, chairman of the committee, presented the following:

Resolved, That the Coles County Medical Society hereby approves a uniform fee of $5.00 for city insurance examinations, in the case of such companies "Old Line" or otherwise as pay other fees. Examinations may be made at the discretion of the examiner, provided that no member in good standing will make examinations for any company for less than the maximum fee paid by that company for similar service.

The resolution was adopted by the society. At this time a banquet was given at the Dole House and the following members were present: Drs. Voight Freeman, McDonald, Ferguson, Dudley, Montgomery, Iknayan, Dudley, Craig, A. T. and Ed. Summers, F. P. Beck, Bennett, Bell, Nolan, Kleckner, Vanatta and Bryan. Visitors: Dr. Epperson, Kansas, Ill.; Dr. Taphorn, secretary of Effingham County Medical Society; and Dr. Hardinger, Gays, Ill.

The following responded to toasts: Drs. Vanatta, Bell, Dudley, Montgomery, Ed. Summers, Iknayan and Bryan; T. O. Freeman, toastmaster. The Coles County Medical Society will entertain the Æsculapian Medical Society of the Wabash Valley at the May meeting, to be held at Mattoon.

Adjourned. R. H. CRAIG, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, Feb. 9, 1910.

At a regular meeting of the Chicago Medical Society, held February 9, the following papers were read: "Hyperchlorhydria," Fenton B. Turck; "Colitis" (by invitation), Geo. D. Kahlo, French Lick, Ind. Discussion opened by A. R. Elliott, A. C. Croftan and Henry B. Favill. "Stovain Anesthesia in Chicago," Henry F. Lewis. Discussion opened by Joseph Beck, G. F. Thompson, and D. N. Eisendrath.

Regular Meeting, Feb. 16, 1910.

At a regular meeting of the Chicago Medical Society, held February 16, the following papers were read: "Rectal Ether Anesthesia" (with demonstration), Jas. F. Churchill; "Operations on Handicapped Patients (by invitation), Geo. W. Crile, Cleveland, Ohio. Discussion opened by Emil Beck (Medical Aspects), J. B. Murphy, and L. L. McArthur. "Surgery of Aneurysm of the Aorta and Its Branches" (by invitation, illustrated), B. Merrill Ricketts, Cincinnati, Ohio. Discussion opened by D. W. Graham, A. J. Ochsner, and others.

Regular Meeting, Feb. 23, 1910.

At a regular meeting of the Chicago Medical Society, held February 23, the following papers were read: "The Future of the Campaign for Public Health" (by invitation), C. E. A. Winslow, Boston; "Prognosis of Angina Pectoris" (by invitation), Frederick Forchheimer, Cincinnati, Ohio. Discussion opened by Geo. W. Webster, Robt. Babcock, J. M. Patton, and Frank Billings.

Regular Meeting, March 2, 1910.

At a regular meeting of the Chicago Medical Society, held March 2, the following papers were read: "Sterility in the Male," Wm. T. Belfield. Discussion opened by Louis Schmidt. "Sterility in the Female," E. C. Dudley; "The Treatment of

Gonorrhea with Reference to the Question of Sterility," B. C. Corbus. Discussion opened by Wm. Baum.

DISCUSSION OF DR. CORBUS' PAPER

Dr. Frederick Baumann:—Concerning Dr. Corbus' paper, I would like to make the following remarks:

First, the urethra is closed, in a state of rest, and the first urine which leaves the bladder during the act of micturition has to pass through the whole length of this channel, and will naturally wash out and contain pathologic products from any part of its passage. To a person, therefore, who has made a study of those conditions, it is impossible to employ the two-glass test, with a view of determining the location of a gonorrheal infection within this channel, as Dr. Corbus advises us to do. Cloudiness of the first portion and clearness of the second portion of urine simply points toward the disease of the urethra and a healthy state of the bladder. But in acute gonorrhea, in cases in which Dr. Corbus advises us to use this test, the production of pus is usually so profuse that both portions of urine are turbid, even in those cases where the disease is confined to the anterior urethra. The doctor must then, furthermore, have been mistaken in his diagnosis; he most probably experimented with recurrent chronic cases of gonorrhea and not with fresh and acute cases.

Second, while the finding of gonococci in the urethral discharge puts the diagnosis of gonorrhea beyond reasonable doubt, the absence of gonococci is no proof that the patient is free from gonorrheal infection of the urethra.

Third, Dr. Corbus recommends in his method of treatment a well-advertised but chemically little active and uncertain remedy, which produces little reaction. He apparently forgets that the treatment of gonorrhea should primarily help the patient, and that the doctor must make use of scientific facts in his work, even if their material benefit is not directly apparent.

The community allows the physician more privileges than it does to any other professional man; it virtually gives him his fellow-man as an experimental subject. It puts the health and indirectly the physical wealth of the people in his trust, and should, therefore, be able to demand at least as much education, accuracy and honesty from the doctor as it does from the investigator at the university, who experiments with plants and animals only.

It is true the investigator at the university receives his remuneration through persons capable of judging and valuing his work, and he is in this respect entirely independent from his experimental subject.

It is different with the physician. He receives his remuneration from the experimental subject direct, and his financial success is therefore primarily dependent upon a person incapable of judging the true value of the work.

The importance of this difference is easily understood if we take into consideration the fact that the different scientific data do not stand in the same relation to the mind of the patient as they do the disease of the patient. Some scientific facts which are of minor importance in relation to disease can easily be demonstrated and made to appeal strongly to the mind of the patient, while others of the utmost importance for the safe guidance of a patient through an attack of disease make little or no impression on the mind and cannot be easily demonstrated.

The experimental subject of the physician recognizes itself as an intelligent being; it draws conclusions, and it is willing to pay for what it thinks it is getting. This holds true even if we make the patient feel better at the expense of his ultimate recovery. The temptation, therefore, is great to make it a special privilege for a scientific fact to be admitted to the dominion of gonorrheal therapeutics, or to give unwarranted prominence to certain scientific facts which will promote, directly or indirectly, the interest of the doctor. The conclusions drawn from a group of these selected facts are obviously at variance with those of the biologist, with those of true science, and very often also with those of common sense.

It is to some experts that thanks are due that the treatment of gonorrhea still stands with one foot in the middle ages, because the truly scientific physi-

cian is for material reasons forced to follow such leaders, at least partly, and it is well that he does, otherwise our therapeutics would show a far more pitiable picture in the light of true science than it actually does.

From a scientific point of view, gonorrhea, as we see it in our clinical work, is the apparent product of a struggle between an attacking unicellular organism and a defending, highly specialized, cellular state. The doctor, in trying to guide the course of this combat, the infection, is limited to the production of injury and the injury intended for the disease-producing germs will equally affect the patient. The results, therefore, of the application of any therapeutically active treatment will be a temporary increase in the clinical symptoms; that is, in other words, the action of a therapeutically active drug and that of the disease-producing germ are, in the main, identical. The difference lies simply in the fact that the dose and action of a drug can be measured and controlled, while an infection, once started, is beyond our control.

The therapeutic success of any medical treatment is, therefore, on one hand, dependent upon the scientific training of the doctor, and, on the other hand, upon the vital resistance of the patient. Or, to come right down to it, we have only one remedy, only one curative agent, namely, the patient. But a treatment based on the pathology of this disease is just, by its accuracy and efficiency, dangerous in the hands of the untrained.

Regular Meeting, March 9, 1910.

At a regular meeting of the Chicago Medical Society, held March 9, the following papers were read: "Autovaccines in Traumatic Infections" (preliminary report of three cases), C. R. Forrester. Discussion opened by Thomas L. Dagg. "Dilatation of the Stomach and Chronic Benign Ischochymia" (by invitation), Max Einhorn, New York. Discussion opened by F. B. Turck, Bertram W. Sippy, and M. H. Mack.

Regular Meeting, March 16, 1910.

At a regular meeting of the Chicago Medical Society, held March 16, the following papers were read: "The Diagnosis of Prostatic Lesions," Louis E. Schmidt; "Perineal Prostatectomy," Alex. D. Ferguson;" "Suprapubic Prostatectomy," Arthur Dean Bevan. Discussion opened by Wm. T. Belfield. (History and development of Prostatic Surgery), G. F. Lydston; (Choice of operation), J. B. Murphy, Gustav Kolischer, Paul Gronnerud and Wm. Fuller. Demonstration—New Apparatus for Complete Drainage of the Bladder Following Either Suprapubic or Perineal Cystotomy, L. W. Bremerman.

Regular Meeting, March 23, 1910.

At a regular meeting of the Chicago Medical Society, held March 23, the following papers were read: The program consisted of a Symposium on Postoperative Complications, "Shock, Along General Lines" (by invitation), M. G. Seelig, St. Louis; "Gastrointestinal Complications," D. N. Eisendrath; "Postoperative Pulmonary Complications," Evarts Graham; "Experimental Shock Compared with Clinical Shock," Fenton B. Turck. Discussion opened by S. A. Matthews, R. M. Parker and E. B. Fowler.

Regular Meeting, March 30, 1910.

At a regular meeting of the Chicago Medical Society, held March 30, the following papers were read: "Demonstration of Interesting Surgical Cases," D. N. Eisendrath; "The Tabetic and Surgeon," Geo. W. Hall. Discussion (Surgical Aspect) opened by A. D. Bevan, and (Medical Aspect) Jos. L. Miller. "Experimental Shock Compared with Clinical Shock," Fenton B. Turck.

Regular Meeting, April 6, 1910.

At a regular meeting of the Chicago Medical Society, held April 6, the program consisted in a Symposium on the Governmental Treatment of Stammering. The following papers were read: "Stammering and Its Treatment" (by

invitation), G. Hudson Makuen, Philadelphia; "Can Stammering be Successfully Treated Through the Agency of the Public Schools," Elmer L. Kenyon; "The Movement for the Treatment of Stammering in the Public Schools of Chicago" (by invitation), Miss Virginia Freeman, Chicago Normal College.

Regular Meeting, April 13, 1910.

At a regular meeting of the Chicago Medical Society, held April 13, the following papers were read: "Pituitary Thyroid and Thymus Activities," Chas. Louis Mix; "Observations upon the Effect of the Various Methods Employed to Reduce Hypertension," Jos. L. Miller; "Shall the General Practitioner use the Roentgen Rays?" Max Reichmann; "A Study of Last Summer's Baby Campaign" (illustrated), Caroline Hedger.

Regular Meeting, April 20, 1910.

At a regular meeting of the Chicago Medical Society, held April 20, the following papers were read: "The Local Effect of Gall Bladder Infections and Gall Stones upon the Digestive Tract and Liver," Frank Billings; "The Systemic Effects of Chronic Diseases of the Gall-Bladder and Bile Ducts," J. B. Murphy; "The Limitation of Gall Stone Surgery," Emil Ries. "Demonstration: Gross and Microscopic Specimens of Gall-Bladder and Liver as Enumerated in the Above Symposium," Robt. Zeit.

Regular Meeting, April 27, 1910.

At a regular meeting of the Chicago Medical Society, held April 27, the following papers were read: "Fracture of the Skull," Frederick A. Besley; "The Repair of Fractures After Splenectomy: An Experimental Investigation," A. B. Kanavel; "Fractures of the Mandible," Thos. L. Gilmer. Discussion opened by W. H. G. Logan.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Regular Meeting, Dec. 14, 1909.

A regular meeting, held Dec. 14, 1909, with the president, Dr. Henry Gradle, in the chair. The following program was presented: Dr. J. C. Beck described a "Case of Death on the Operating Table." Dr. F. G. Stubbs read a paper, "The Septal Spur and Its Removal."[1] Dr. O. T. Freer read a paper, "Resection of Bony Deflections."[2]

CASE OF DEATH ON THE OPERATING TABLE.

Dr. Joseph C. Beck:—A man, aged 35 years, was admitted to the Cook County Hospital, with a history of either meningitis, intoxication from alcohol or a narcotic. Later the diagnosis of meningitis was made, because of the presence of a running ear, stationary pupils, slight rise of temperature, vomiting, drowsiness, and the absence of other general symptoms. I saw him on the following day and made a diagnosis of probable serous meningitis from middle ear trouble, and advised operation. The patient was prepared, ether was administered, and in twelve minutes the man was dead. All attempts at resuscitation failed. Autopsy: The brain is normal. The temporal bone shows a necrosing mastoiditis. (Demonstration of temporal bone.) The remaining portion of the mastoid was sclerotic, but the tegmen was free from disease. Chest, negative; abdomen, negative except for the absence of the left kidney from its usual place. The right kidney was cystic. The left kidney, which was very small, was found at the left sacroiliac joint. Its ureter measured only 3½ inches in length. Histologic examination shows very little good functionating structure in either kidney. (Demonstration of kidneys.) It is, therefore, very likely that the patient had uremia at the time of admission, although the urine analysis is given as negative as to albumin. I

1. Text of paper on page 597.
2. See text of paper on page 584.

believe that the small quantity of ether administered aggravated the process and caused death more quickly than if patient had been left to complete the usual course of a state of coma.

I must add that this post-mortem was made by Dr. Hunter, the expert necrologist of Cook County Hospital, who tells me that this interesting finding of the left kidney occurs very seldom.

DISCUSSION OF DR. BECK'S CASE REPORT.

Dr. J. Holinger:—It seems to me that there is a possibility for reasonable doubt whether uremia was the cause of death in this man. There was no symptom pointing to uremia during lifetime, and the kidneys as I see them here do not exclude normal function. I do not think that a deformed kidney is necessarily a badly functionating kidney. There are no acute or recent changes, which explain why he should have died *now* and not twenty years ago of uremia. The fact that no albumin was found in his urine certainly supports this view. I may be mistaken as well as not, but the reason for my scepticism is the following case:

Many years ago I performed a post-mortem on a woman, aged 36 years, who died of pneumonia of several lobes. No kidneys were found in the renal region, but instead an irregular mass of kidney tissue over the sacrum with the ureter, about two centimeters long, leading directly into the bladder. The woman never had any urinary symptoms, no uremia or anything pointing to kidney disease could be found. She had a normal heart. There was in this case absence of the vagina, uterus, ovaries and tubes. Between the bladder and rectum was a broad ligament of connective tissue, and some thickening in the middle and on both sides, representing the only trace of genital organs. Nothing in the woman's history pointed to this condition before her death.

Dr. Beck (closing):—One kidney in the stage of cystic degeneration and the other kidney small, with an absence of normal kidney structure, is extremely suggestive as to the patient having died from uremia rather than from any other cause. After twelve minutes of slow administration of ether, death could not be ascribed to the anesthetic. I reported the case because the findings were so misleading.

DISCUSSION OF THE PAPERS OF DRS. STUBBS AND FREER.

Dr. J. E. Rhodes:—With reference to the denudation of the crista, I have found the raspatory an all sufficient instrument. The overlapping of cartilage, spoken of by the essayist, is sometimes very puzzling, and denudation of the spine is very difficult until this overlapping is appreciated. When that is taken away, it is possible to get under the periosteum of the ridge after cutting along its crest. It is a very broad statement to make, and yet it is a justifiable one, that all bony deflections or abnormalities of the septum can be corrected by means of submucous resection. Many of the operations formerly performed are now obsolete. The preservation of the mucous membrane is all important, and by making a resection with that end in view, we are doing good to our patients instead of harm, even if we take away more bone than is necessary to get free passage in some cases. I think Dr. Freer's idea is to make as perfect an operation as possible, and to that end the open method, with the reversed L flap he advises, I have found adequate, inasmuch as every stage of the operation is done under the direct inspection of the eye.

Dr. C. M. Robertson:—I have been sawing off spurs all my life, and I have never had scab formation after the operation. I believe in saving the mucous membrane, and in any case where the ridge does not ascend too rapidly, you can introduce a saw, going through the bone carefully so as not to cut through the mucous membrane above it. After you get through the bone, if you will tip the saw outward, you can separate the upper part of the bone from the mucous membrane, grasp it with forceps, and peel it out. In that way you can do a submucous operation with the saw, saving the mucous flap. It is not necessary to trim the flap, because if too much membrane to cover the mound is left at the lower border of the flap it will slough off in a few days.

Where the septum rises rapidly in its deflection, you cannot use the saw, but must take the spur out in some other way. The Hajek chisel would be all right, although I would not like to have it used on me. There is always a jarring sensation of which patients complain. The chisel is also dangerous at times, because the septum will splinter. The same thing occurred with the old spoke-shave. I cannot see that the chisel has any advantage over the spoke-shave, where you place the instrument behind the spur and pull forward, the reverse procedure being employed with the chisel. It all depends on the operator whether or not a smooth surface is secured. It is impossible to make a concavity in the manner mentioned by Dr. Stubbs, because you cannot tell how much the tissue will fill up. When we paid no attention to saving the mucous membrane, I saw patients in whom the spurs removed occupied a space one inch long and one-half inch high, with no thickening at all, and years afterward the mucous membrane could not be told from normal mucous membrane.

There are certain conditions where the submucous resection is not indicated. Where there is an angular deflection, and the obstruction on the convex side can be relieved, by reflection of the septum, the old saw operation is good enough. Of course, when the deflection is irregular, the submucous operation is the only one.

I have had the experience of thinking I was cutting down on a spur, thinking I was on the floor of the nose, when I was not. I had a marked case recently where the day after the operation I was surprised to find that the entire lower angle had been left in the nose. There are many of these cases of angular deflection with a piling up of the crest. I have sawed off the crest and done a flap operation on the mucous membrane, getting a perfectly straight nose, just as in the submucous operation.

Dr. J. C. Beck:—I have made some examinations of spurs and ridges removed by the submucous route (demonstration of a histological section), and invariably I found an explanation of failure in sawing off a ridge and leaving it exposed to infection. The formation of new bone from the embryologic structures present is demonstrated. The work outlined by Dr. Stubbs is the same as that carried on by me for several years, with excellent results. I think that most of us do not make a submucous operation, but are satisfied with such a procedure as he outlines. These ridges show considerable cartilage and the formation of new bone from this cartilage, a rapid increase in the cartilage cells, with new bone cells forming at the junction. One can see, how simply sawing off a ridge will form a new ridge. To do the operation as it is done by Dr. Stubbs, infection and subsequent bone formation will be prevented.

In regard to the submucous operation. I have had considerable experience with it, and I am satisfied that the incision, as outlined by Killian, extending it far down to the floor is, in the majority of cases, sufficient. Reading Neumann's idea, as to the periosteum crossing over the ridge, explains to me the many tears I have made in removing the ridge. In splitting the periosteum over the ridge it is easy to dissect it on both sides and remove the anterior portion of the maxillary ridge. Posteriorly, there is no difficulty in cutting out the bone. I have been using the Killian forceps, breaking out the bony septum. The patient does not complain of any after-effects from this so-called brutal method. In fact, the breaking is done gently and then the bone is removed between the mucoperichondrial flaps.

Dr. Edwin Pynchon:—I think that most of us cannot always report as favorably as Dr. Robertson has on the removal of ridges with saws. I have had many patients come to me who had been operated on by others and there has been in the nose at the site of the ridge an area which did not heal properly; the mucous membrane was chronically irritated.

About twenty years ago Dr. Rice of New York read a paper on the treatment of chronic septal ulcers in which he reccommended massage. I might say that in that we had a solution for the imperfect healing of a wound after the removal of the ridge by the sawing operation. It is my belief that in the ordinary method of healing the membrane forms simultaneously over the entire area of the wound. Dr. Rice's theory was to massage it, so as to restrict healing in the center and

stimulate healing at the periphery, in other words, to cause the wound to heal from the periphery to the center. In these cases I have been pleased with the results.

The suggestion Dr. Stubbs made as regards making a slight depression, as much as possible, over the area of the tissue removed, I believe to be correct. I have found on some occasions, when I did not succeed in doing this as thoroughly as was desired, that in two days' time there seemed to be some elevation of the bone at the point where the ridge had been removed, and I have on several occasions done a supplementary operation, removing a little more bone.

As regards the after-treatment after the removal of ridges or other malformations in the nose in which the bone has been denuded: I have been for years employing the hot carbolized douche. I do not believe this to be the custom generally, but having had such uniformly beneficial results from its use, I do not hesitate to recommend it most heartily. The strength is one teaspoonful to the pint. As regards the window resection operation: It is being greatly modified and improved, and promises to be the operation of the future in a large number of those cases which have been previously operated on in other ways.

I wish to show you a few little things not previously exhibited. One is a little instrument for the introduction of gauze; a second is used in connection with the taking of stitches, where there is a tendency for the membrane to retract or where accidentally a tear is made. This little instrument will help in tying the knot. The third instrument is a special tip for irrigating the nose. It is made of metal, so that it can be sterilized. Fourth, I have modified Dr. Becks' chisel, shortening the blade and lengthening the shaft.

Dr. J. Holinger:—Dr. Freer makes an L-shaped incision. I do not like it, because it permits the lower flap of the mucous membrane to roll up, which roll later on fails to shrink. As to the ridges, there is very often, as Dr. Stubbs says, a cap of cartilage on top of the bony ridge. If you loosen the mucous membrane and periosteum, and then take out the ridge it sometimes happens that when the two sides of the periosteum fall together you find at the side of the old ridge another one, although not quite as high as the first. This has puzzled me several times. Once after I took out the packing, I opened the sack between the membranes again, and found this cartilaginous cap which was high enough to make it look like the old ridge.

Dr. B. Haseltine:—My own experience in the old days when I did sawing operations coincides with that of the speakers who have observed the reformation of ridges. I often used to find the spur returned some weeks after I had made what I thought a good operation. Dr. Beck's contribution gives us the comforting assurance that this is as it should be. The L-shaped incision with the lifting of the flap is one which I was formerly fond of but recently I have used almost wholly the anterior vertical incision as suggested by Killian. The difficulty and danger of dissecting around sharp spurs I entirely avoid by leaving such dissections until the cartilage is removed. I then insert the bi-valve speculum between the flaps and make the dissection with the field of operation in plain view. In this way all damage to flaps is avoided and postoperative perforations are unknown in my experience.

Dr. E. L. Kenyon:—I suppose we will continue to exercise our judgment in the removal of septal spurs. In spite of the advantages of resection, there is no question but that all the gentlemen here will operate on septal spurs in selected instances without raising the concave mucous membrane. The discussion has been limited practically to the non-traumatic cases. There are non-traumatic and especially traumatic cases in which the deflection plays a slight part and in which the thickening is exceedingly important. Complete extirpation of the thickened bone or cartilage between the two layers of mucous membrane is not the only means of doing away with denuded bone. This is accomplished practically as well by the careful raising of the convex mucous membrane and by preserving it intact, even though the concave mucous membrane be not separated. If this convex elevation be successfully accomplished it is often quite unnecessary to go completely through the septum. Success depends on delicacy of technic. In the cases

where the periosteum and perichondrium are easily raised, there is no difficulty, but in those instances where adhesions are persistent over a large area, the raising of the convex mucous membrane, by whatever flap incision, is a matter of great difficulty. It is here that we fail and it is here that we ought to study to excel. In proportion as we succeed in obtaining a view of the operative field as clear as that obtained by the general surgeon in operations carried on directly beneath the eye will the technic of this and other processes in nasal surgery become accurate and certain. And it is just here that we owe an additional debt of gratitude to Dr. Freer, whose technic in this respect is a positive advance in nasal surgery.

The instruments employed for the removal of septal projections may be varied in accordance with the experience of the operator. The chisel may be used, or the forceps, or the saw, but no mention has yet been made of the trephine. I presume that many operators use it, and to good advantage, and those who do will never abandon it wholly for any other instrument.

As to the necessity for resecting completely the supramaxillary crest at its base, there is no question in my mind that this is not necessary in all cases. One resects the cartillage above, also the vomer posteriorly when needed, but particularly where the ridge is prominent in front, removes most of this anterior low thickening with the trephine, and obtains practically a perfect result, and with great reduction in the difficulty of the technic.

The instruments for septal work now on the market, notably the Freer set, have one quite unnecessary defect, which could easily be remedied by the united action of such a society as this. The handle of these instruments is so thick that the view of the surface operated on is obstructed, particularly when the anterior opening is narrow. The reason for this is that there is a standard form made by manufacturers which is almost universally employed by instrument makers because of its cheapness. We might prevail on manufacturers to make this basal form thinner, and thus regularly prevent so much interference with the view by the handle of the instrument.

Dr. Henry Gradle:—My experience dates back to the days when Bosworth first recommended the sawing operation, and I saw many operations done, by others as well as by myself. There is no question but what some of them were perfectly satisfactory. Where we dealt with the septum which was but little deflected, or not at all, where the spine was tolerably sharp and well-defined, and not very broad, the sawing operation would occasionally yield perfectly satisfactory results.

The denudation of the bone is not always a great obstacle to healing, and in many instances fairly smooth healing took place, but after all this occurred only in the minority of cases, and in a still smaller minority did we get permanently satisfactory results. Very frequently the immediate result seemed to be all that could be desired, but in a month or two the old condition was restored nearly as badly as before, because we did not take out the matrix of the condition. According to Zuckerkandl, these spines are all due to displacement of the bone on the cartilage or the cartilage on the bone, or the growth of a strip of cartilage left in the groove of the bone, and if that is not taken out completely, under the stimulus of a persistent catarrh, new formation will occur and the former condition is restored, even after very satisfactory sawing operations.

I remember an extreme instance in a girl of thirteen, where I did a sawing operation, apparently with good results at the time. Later, a second operation was done by another doctor, with a similar temporary result, and a third operation was finally required and done by myself. The result then was permanent after a year, but whether patency was eventually maintained I now question. I do not believe that newly-formed cicatricial mucous membrane is always a source of irritation. This is true in some cases, at least temporarily, but not always.

If we compare the results of then with the results of now from the submucous operation, there is no question that the latter deserves preference in every instance except in a small number of cases where we deal with a sharp circumscribed spine on the upper edge of the vomer, reaching nearly to the posterior end.

In these cases it is really very difficult to dissect off the mucous membrane satisfactorily. It is even impossible when the edge of the spine is quite sharp, and in such cases, if the spine has not a very broad base, the chiseling operation, even with the sacrifice of a small amount of mucous membrane over the base of the spine gives satisfactory results. Provided we use the chisel and not the saw, it is practically as good as if we retained the mucous membrane, although the healing is never quick. But it is only in such cases where it is difficult to dissect off the mucous membrane around a well-defined sharply apexed spine that I would consider the chiseling operation without previous dissection of the mucous membrane justifiable

I would also like to call attention to these sharp spines which burrow into the mucous membrane. They are not rare, even when the patient does not complain of obstruction. These spines give considerable trouble. Frequently such patients come with a history of an irritable nose, attacks of sneezing, sudden engorgement, all of which can be accounted for by the presence of a small sharp spine, which ordinarily does not impede the respiratory patency of the nose.

Again, this sharp spine has an important relationship to proliferative catarrh of the middle ear. My observation has been so frequent that I have no reason to doubt the relationship. I have so often found the greater deafness, or the one-sided deafness, on the side of such a spine. Of course, we cannot prove the connection, therapeutically, in all instances, because, as a rule, it is a question of permanent damage and removal of the spine will not restore the hearing. Instances are not uncommon, however, where when we get rid of the irritation the deafness has ceased to be progressive and the other ear symptoms, for instance the stopped-up feeling, disappear.

Dr. A. M. Corwin:—There are one or two points which I would like to accentuate: First, the one referred to by Dr. Holinger, the matter of the sharp ridges. There is often a little nucleus of cartilage at the apex of a sharp spur or deflection, especially where these are low down anteriorly, involving both bone and cartilage. After a submucous resection such thickened periosteum and cartilage remain as a slight projection which tends to the reformation of a spur. It is my custom to snip these off. The ample convex flap readily covers the hiatus, in the healing process.

Then the matter of cutting through the sharp crest. Each operator will continue to individualize his technic. In one case he may use a small trephine, in another the chisel, and in still another a saw. The latter is often very convenient for making a partial cut through the base of a thickened deflected crest before breaking it off with forceps. To say that any one instrument should always be used, the *sine qua non* for compassing the work of a given indication, is to speak with unwarranted narrowness. The vital matter in reducing a deflection is to do away with the deviated crest below. If we do not, the operation is but half a success. So, too, the deviation must be reduced sufficiently above, or the membranous septum after repair will still hang from the projecting line of the deviation and the deformity is but partially corrected.

There is one point which I brought out in a paper before this body a number of years ago which I think has been overlooked in the present discussion. There are noses which present in the cartilaginous part a deflected surface above which is almost flat, almost a plain surface from above down and outward. There is, I think, no need in removing this; a decent conservatism bids us save bone and cartilage where it can be done with expedition. Especially is this the case at the upper and anterior part of the nasal partition where cartilage is put for a purpose. It has been my practice in such cases to introduce high up in front a submucous knife, something after the pattern devised by Ingals some years ago but which I have modified, making a long narrow shank, slightly curved and having a small projection like that of a crochet needle, its cutting edge being on the distal or traction side. This knife is entered on the flat anteriorly through a preliminary slit made with a bistoury. This submucous knife is thus worked upward and back under the perichondrium. It is then turned so that the lateral point pierces the cartilage and is drawn forward dividing the cartilage by submucous

incision. One or two such cuts close together reduce the resiliency of the cartilage allowing the flap of cartilage to be saved, covered by normal mucous membrane and perichondrium, to swing down into line when it has been severed posteriorly, below and in front, and the rest of the deflected septum reduced in the usual fashion.

My point is that in selected cases it is needless to remove a larger amount of cartilage when it can be preserved so easily. The resulting septum is by so much strengthened at its weakest place.

Dr. F. Gurney Stubbs (closing):—It is now almost seven years since I first started to do a submucous resection for deflections. In that time I have had a varied experience with all sorts of septums, and it was not long before I was puzzled why in so many instances I found this long, narrow strip of cartilage passing back along the vomer-perpendicular-plate junction. The reason for this became apparent when I went back to the embryologic development of the septum, which really gives us the only true understanding of why we have these deflections. I do not believe that there are so many changes taking place later on in life as Dr. Freer would have us believe; most of these are due to the fact that the cartilaginous parts do not fit accurately into the grooves, and in some cases the strip of cartilage which should be included in the canal projects laterally. If the piece of cartilage, as shown by Dr. Holinger, is low down, it is part of Huschke's cartilage, or the organ of Jacobson. This cartilage is entirely in its own capsule. After removing the cartilage, a knife with rounded edges is required to cut along the edge of the bone, and then start separation further down.

I will try Dr. Freer's raspatory, but have found long ago that the knife would accomplish the same thing as easily. As to the question of leaving the mucous membrane or not, I think Dr. Robertson is to be congratulated on the universal success in his cases where the saw was used. It does not agree with my experience. I recall a meeting of the British Laryngological Society several years ago where Semon related his experiences, which were unpleasant rather than pleasant. He said, among other things, that immediately after the operation he imagined he had a perfect result, but that not long afterward the condition was as bad as before. There is no question but what, where the mucous membrane is sacrificed, there is a greater chance of having these annoying conditions occur.

I have never seen splintering of bone occur and I have used the chisel as much as anyone. If your chisel is sharp and you use it with caution, you can manipulate it easily and you will not have a fracture occurring. Use little force before you attempt to break loose the bone. As to the jarring, that is not worth paying any attention to in the argument. We have all stood it from the dentist before the days of the inlay, and we know that it did not hurt. It is merely unpleasant, and the patient will put up with it as long as it is not painful.

The traumatic spur or deflection does not deserve the attention which has been given to it.

The after-treatment is unquestionably shortened where we put back the mucous flap. In a few days we are practically through with the patient. Where the mucous membrane is sacrificed, the patient comes back to us, probably for weeks, with an annoying discharge and exuberant granulations. It seems to me that there is more puttering in rhinology than in any other specialty in medicine. Swabbing and irrigating and using an applicator is not only unsurgical, but is likely to produce infection. That is an instance of what is being done in many nasal operations to-day. It is nonsense, and even criminal. It is better to consume a few more minutes in lifting the flap, removing the spur and putting the membrane back. In a few days you have a normal septum and the additional procedure is justified, not only so far as we are concerned, but particularly so far as the patient is concerned.

Regular Meeting, Feb. 15, 1910.

A regular meeting was held Feb. 15, 1910, with the president, Dr. George E. Shambaugh, in the chair.

SUPPURATIVE EAR DISEASES IN DIABETICS.

Dr. Otto J. Stein, Chicago.

Abstract:—Three illustrative cases are reported in order to show various phases of the subject:

Case 1.—A woman, aged 21 years; history of bilateral suppuration of the ears for two years; extreme destruction of drum membrane, ossicles, etc.; profuse purulent discharge; severe eczema of meati, auricles and abdomen; dry skin; polyuria; polydipsia; recurrent furunculosis; sugar, diacetic acid and acetone in urine. After a few weeks' treatment dietetic, hygienic and local, preparatory to a mastoid operation patient suddenly developed acute ear symptoms on one side and for one week presented a typical clinical picture of infected sinus complication. No operation was performed; death; no autopsy.

Case 2.—A Jew, aged 62 years, a diabetic for three years, developed an acute otitis media with pronounced mastoid involvement. Early myringotomy and energetic measures to rapidly reduce the inflammation in connection with a regulated diet and hygiene resulted in a complete restitution of the ear without an operation or serious changes. One year later: no recurrence; hearing good; sugar, 1.5 per cent.

Case 3.—A woman, aged 34 years, with chronic suppurative otitis media bilateral for years, probably since childhood. The history indicating that the diabetes has existed some twelve years. Under diet and hygiene the sugar, diacetic acid and acetone were reduced to *nil;* and then both ears were operated on after the method of Heath of London; chloroform anesthesia. Both mastoids were sclerosed, antri small, very deep and lined with a pyogenic membrane full of pus and débris. Pense flap was employed. Noteworthy is the fact that the operation lasted three hours, that there was primary healing of the posterior wounds and that epidermization progressed as in any ordinary case. One year later shows hearing much improved, right ear dry since operation and left ear occasionally wet but of short duration and at which times either sugar or acetone may be present.

DISCUSSION

Dr. C. M. Robertson:—These cases, when the discharge begins, are very much like the cases that complicate influenza, where there is a large destruction of tissue in a very short period of time. The resistance of the body is *nil*, and there seems to be a peculiarity in regard to different individuals. The patient may have much sugar, with the presence or absence of diacetic acid or acetone, and healing take place promptly. In other cases the tissues, after the operation, lie as if dead, and most operators treat the wound as an open one, because if they close the wound the tissues slough. Any anesthetic used must not irritate the kidneys, therefore ether is contraindicated. Chloroform or gas should be used. In one case, reported by Dr. Stein, the operation lasted over three hours. It is the first case I have ever heard of that survived where the operation lasted more than forty-five minutes or an hour. The percentage of cases that terminate fatally is very high, probably sixty to seventy-five per cent. These cases must be differentiated from cases that are tubercular. In a tubercular ear you get a better result after operations than in a diabetic ear. Sinus disease, brain abscess and meningitis occur often in these cases. In nearly every case of diabetic mastoiditis an epidural abscess with thrombosis of the lateral sinus is present. More patients die from this cause than from infection of the internal ear or labyrinth. It seems to make no difference whether the eye grounds show a diabetic change or not. There seems to be no particular line from which conclusions can be drawn as to whether or not the patient will get well. Young people, of course, are more liable to die than are older people, although most of the cases reported have occurred in people over fifty years of age.

AUTO-VACCINES IN NASAL ACCESSORY SINUS INFECTIONS.

Frank Brawley, M.D., Chicago.

It is my purpose to-night to make a preliminary report of some of my work on the treatment of nasal accessory sinus infections by means of auto-vaccines. I have been so much encouraged by my results that I hope to be able to stimulate others to investigate this subject so that we may determine the exact value of this treatment when used for the accessory sinuses.

My plan for obtaining the specimen of infectious material has been to thoroughly irrigate the nasal cavities with warm sterile physiologic saline solution, then to pass a sterile silver tube attached to an aspirating syringe into the sinus and so withdraw the contained secretion. If direct aspiration was impossible, I obtained the pus by use of the suction device which I presented to this society several years ago. The material is placed in a sterile bottle and sent to Dr. Thomas A. Dagg, who has made all of my vaccines. It requires four days, on the average, to obtain the finished vaccine. It is then administered about every fifth day with a sterile glass syringe. The initial dose should not be more than half the usual dose of the organism in question. For instance, if staphylococci are found 250,000,000 are injected instead of the usual 500,000,000. If the general and local reactions are slight, the full dose is given 5 days later. An attempt was made to give the injections on the day following a day of general depression in order to clinically strike the rise in the opsonic index. If this depression occurred on the usual injection day, the patient was told to appear on the following day, provided the depression had lessened or disappeared.

Mixed infections require a smaller dosage than staphylococci, especially where diplococci or bacilli are present. It is advisable, of course, to have all organisms identified, but practically that has not been possible. I am hoping the bacteriologists will tell us why this is so. I am convinced that in many cases unimproved by vaccines the real etiologic organism was crowded out during cultivation by the more rapid and luxuriant growth of other organisms present.

Case 1 illustrates the necessity for proper surgical drainage of the sinuses involved before administering vaccines, and also illustrates my contention that unless all organisms found are cultivated separately the slower growth of some will be inhibited by the luxuriant growth of other organisms. In this case the first vaccine was a culture of staphylococci, while the second contained some diplococci. Several cases showed absence of organisms when cultures were made from the sinus secretion obtained during the final stages of the infection.

A valuable contribution to this subject is Levy's report in the "Annals of Otology," etc., for March, 1909. The report includes the results of investigators in Colorado obtained by means of a circular letter. There were fifteen accessory sinus cases reported, all of which were chronic cases which had been faithfully treated, and of these, six were cured, six improved and three not improved.

The chief clinical points to be noted are that the subacute infections are most favorably influenced by the vaccines, *i. e.*, cases which have existed for not longer than a year. The acute cases seldom need vaccines and the chronic cases show only slight benefit. In chronic cases the infected cells seem to be walled off as it were, and do not produce a general toxemia. This exclusion from the general circulation doubtless reduces the reparative processes in the cells and prevents stimulation by means of vaccines.

Case 1.—Miss L., aged 35 years. Examined Aug. 30, 1907. Had offensive discharge from right nostril for two years accompanied by temporo-occipital headache; nose tender to touch from outside. Secretion was seen coming from the right middle meatus into the choana. The bulla ethmoidalis was infected together with the frontal sinus and the antrum. After resection of the anterior third of the middle turbinate body and removal of the nasal wall of the bulla there was much relief and copious drainage. Irrigation of the sinuses rapidly ended the infection in all but the antrum, which became very active following an acute rhinitis. Irrigation of the antrum for about seven weeks from one to three times weekly produced no permanent cessation of secretion and several acute attacks or relapses occurred, once involving the frontal sinus. An auto-vaccine

showing staphylococcus albus and aureus was given in five hundred million doses every seventh or eighth day for five weeks without result. The wall of the inferior meatus was then removed and proper drainage established after which vaccine was again administered with complete cure in two months. The second auto-vaccine contained a few diplococci.

CASE 2.—Mrs. K. W. M., aged 49 years. Examined Sept. 9, 1908. Gave history of head pains for three years, indefinite as to location, but described as a skull pain. Occasional "colds" but no nasal discharge and normal sense of smell. No local tenderness about accessory sinuses. Septal perforation anteriorly. Some polypoid degeneration at tip of the left middle turbinal, and turbinal swollen and boggy. After shrinking the left middle turbinal and applying the suction pump, pus was withdrawn from the corresponding meatus in large quantity. The anterior one-third of the middle turbinal was resected and the frontal sinus probed and irrigated and trikresol solution 1-200 forced into the sinus. This treatment relieved the headache almost entirely and was continued about one month without controlling the secretion.

Oct. 12, 1909, 0.5 c.c. of an auto-vaccine showing staphylococcus albus was injected. The ethmoidal bulla was opened with negative findings. Two acute stages or relapses interfered materially with the progress of the case as the patient was not able to afford proper surroundings and worked very hard and suffered considerable exposure. The discharge gradually lessened and Jan. 26, 1910, while under treatment again for the second relapse no bacteria were found in the secretion washed from the sinus. There was rapid lessening of the discharge from the time the vaccine was used. The vaccine dosage was increased gradually to 1.5 c.c.

CASE 3.—Mrs. G. S., aged 26 years. Seen Nov. 13, 1907, with history of severe "colds" of two months' duration, with thick yellow nasal discharge dropping chiefly into throat. Suction showed a long thick string of muco-pus coming down into right choana. The nose was very narrow and it was necessary to remove the entire middle turbinate body on the right side. The pus draining from the posterior ethmoids and the sphenoidal sinus was so virulent following the operation that a pharyngitis and tonsillitis resulted. The discharge slowly lessened but a relapse or fresh attack occurred Jan. 1, 1908, with severe temporal headache relieved by flow of pus following shrinking of the tissues with cocain and suprarenalin. Jan. 18, 1909, removed walls of posterior ethmoidal cells near sphenoidal orifice and irrigated the sphenoid which contained pus. One week later removed the anterior sphenoidal wall about the ostium together with the adjoining ethmoid cells, followed by drainage of bloody yellow and occasionally thick greenish pus. Three weeks later as secretion continued in spite of surgical drainage vaccine was administered in dose of five hundred million per c.c., the organism being staphylococcus aureus. Some depression was experienced during the remainder of the day but felt unusually well the next two days. There was no headache and the secretion was thinner and less in amount. Eight days later a second injection of 1 c.c. was given and the discharge which had resisted all treatment for three months and which had endured for five months altogether ceased almost suddenly after the second injection, showing only a slight trace when examined two weeks after first injection and two weeks later cultures and smears showed no pus cells or bacteria.

CASE 4.—Miss A. K., aged 22 years. Examined Feb. 24, 1908. Gave history of having had severe nasal discharge with thick crusts and post-nasal dropping as long as she could remember. No headache but had at one time an abscess of left ear. Examination showed large green-yellow crusts on septum and covering extensively atrophied turbinals in the left naris. Suction brought forth thick dark stringy secretion into the left middle meatus. There was a spur on the right side of the septum and the atrophy was confined chiefly to the inferior turbinal. Cleansing treatment for two days and another suction examination showed pus only in the left naris.

Feb. 29, 1908, 1 c.c. of an auto-vaccine showing staphylococcus albus was injected. Four days later some improvement was noted, especially in the subsidence of a

cough which had been very persistent, and most of the secretion was blown from the nose instead of draining backward into the throat. This improvement, however, may as well be credited to the cleansing treatment as to the vaccine, although the rapid relief of the cough was unusual, unless we credit it to the vaccine. Improvement continued for six weeks when the patient failed to return. Operation for drainage of the sinuses was refused in this case.

Case 5.—Mrs. M. P., aged 52 years. Eyes examined Jan. 17, 1906, on account of a conjunctivitis and difficulty in opening eyelids. The nose showed polypi protruding from the middle meati and bathed in thin yellowish white secretion. These were removed and the anterior ethmoid cells thoroughly cut away. Pus was found on irrigation in the right frontal and maxillary cells. As local treatment proved insufficient the antrum was opened by removal of a large portion of the nasal wall and the antrum rapidly ceased to secrete. The frontal sinus, however, in spite of a very patent duct, continued to secrete. The treatment of the right naris began Sept. 25, 1906, and had been continued at intervals until April 6, 1908, when a vaccine showing staphylococcus aureus and albus was administered and continued twice weekly for two months, when in spite of treatment an acute sinuitis developed and with it a bronchitis and laryngitis, with reinfection of all the cells involved, together with the ethmoids of the other side of the nose. She is now trying a more favorable climate.

Case 6.—Mrs. H. D. R., had been under treatment for six months for an iritis of the left eye when she came to consult my associate, Dr. Frank Aliport, who referred her to me for a nasal examination. The nasal infection was found in the corresponding anterior ethmoid cells which were removed, together with half of the middle turbinal, Feb. 26, 1908. No secretion was found in the antrum or frontal sinus. Four weeks later, as the discharge remained about the same in quantity and character in spite of suction drainage, a vaccine was made showing staphylococcus albus and given twice weekly. One week later the secretion was very much less and patient was much improved generally, and the eye showed great improvement. However, at this time she disappeared and further observations were impossible.

Case 7.—Miss M. P., aged 15 years, came June 9, 1908. Gave history of frontal headache for two years, difficult nasal breathing and copious, thick, yellow and green nasal discharge; pansinuitis with polypi. In the right naris the polypi were removed, the anterior third of the middle turbinate resected, and part of the nasal wall of the antrum was removed. In the left naris the anterior ethmoidal cells were curetted, the polypi removed and part of the nasal wall of the antrum removed. Drainage was maintained by means of the suction pump, irrigation of the sinuses, cautery to the granulation tissue about the operative openings, etc. The discharge lessened gradually. Oct. 23, 1908, 0.25 c.c. of an auto-vaccine of 500,000,000 per c.c. was injected. A second injection was given five days later, at which time no secretion was seen in the nose or sinuses. The vaccine was continued. Nov. 17, 1908, patient acquired an acute rhinitis which lighted up the old condition for a time, necessitating secondary operations on each nasal antrum wall. Went to California and on May 18, 1909, when reexamined, showed some thin yellow green secretion in the antra and tenderness about the frontal sinuses. She had suffered frequently from frontal headaches during the California trip, but refused to consider an external operation, preferring to use the water power suction pump indefinitely.

Case 9.—Miss P. H., aged 16 years, came Oct. 26, 1908, with a history of "catarrh" with excessive nasal discharge of bad odor for one year. Practically every accessory sinus of both sides except the right antrum was discharging pus which had produced extensive atrophy and crust formation. The fronto-nasal ducts were exposed by removal of the middle turbinal tips and the anterior ethmoid cells curetted and suction and irrigation of the various cells continued to aid drainage. Nov. 20, 1908, 0.5 c.c. of an auto-vaccine containing 500,000,000 staphylococci was injected, causing a local swelling. The vaccine was increased every seventh day until 1.5 c.c. were given. This amount the patient said caused a fever and queer sensations in her head beginning 6 to 8 hours after the injec-

tion. The arm remained somewhat sore and swollen for two days. Patient went to Colorado to school and had vaccine continued for six weeks with suction. Aug. 6, 1909, reported for reexamination and was found to be much improved. The turbinals were larger and the crusts few and small. A second course of vaccine was given which also produced local swelling of the arm.

Case 10.—Miss E. S., aged 27 years. Gave a history of "catarrh" and ear gatherings during childhood. Two years ago began to have severe "colds." A particularly severe attack began one year ago, with copious yellow discharge with pronounced odor. Treatment by her physician at that time consisted in cauterizing the turbinals. When seen first on Oct. 25, 1909, it was found that the left frontal sinus and anterior ethmoidal cells were infected. There was tenderness to pressure on the frontal floor and at the inner orbital angle. Puncture and irrigation of the left antrum of Highmore revealed much yellow pus with marked odor. At the next visit, Nov. 5, 1909, the anterior half of the left middle turbinal was resected and the walls of the bulla ethmoidalis cut away. The constant left frontal headache was relieved by suction and irrigation of the bulla. Irrigation of the antrum and frontal sinus was continued daily, following which suction showed very little secretion from the ethmoids. The sinus secretion was considerably less after ten days of daily irrigations, but as the patient lived in a neighboring state removal of the nasal wall of the antrum was advised. A vaccine specimen was taken Nov. 20, 1909, and the first dose was given Nov. 26, 1909, and consisted of three hundred million of a mixed culture of staphylococcus albus and a few Gram-negative bacilli. The following day there was no appreciable antrum secretion and less than usual in the frontal sinus. The arm where the vaccine was injected was tender and there was slight general depression. Four days later a dose of 600,000,000 was given which was followed by increased local tenderness and swelling at the site of the injection and the depression was greater than before. The vaccine was given every fourth day until Dec. 15, 1909, nineteen days after the first injection, when no more secretion was found. The patient was discharged and her family physician advised to administer the vaccine once weekly for four injections. This case is, of course, not conclusively in favor of the vaccine, as we have all seen similar cases clear up under irrigation alone, yet we must admit that the rapid healing of a case with a history of a chronic discharge was at least very unusual.

DISCUSSION.

Dr. Mary Lincoln:—In all cases of infection in which the auto-vaccines are to be used, cultures should be made on blood serum or blood agar, in order to imitate as far as possible conditions present in the mucous membranes from which the material is taken. Sub-cultures are made in 24 and 48 hours, and from these a careful and thorough study of the organisms present can be made. It must be remembered that some organisms grow readily on artificial media, and may not be very virulent, while others which grow but poorly may be extremely virulent. That is possibly one reason why laboratory reports are sometimes unreliable. The organisms that grow most readily are reported, while the others escape notice. Studying a smear at the same time that a culture is made will give the most valuable information. It will show all the organisms present, and this study, combined with the study of the culture, will often tell us which organism is causing the infection. It is also important to know the normal flora of the mucous membranes, so that the flora of infections can better be studied. We have much to learn as to the normal flora and still more as to the organisms present in infections. Certain clinical pictures are produced by certain groups of organisms. One of the great difficulties is that the cultures studied in laboratories must be studied under artificial conditions, and it is sometimes impossible to correlate these studies with the studies made of smears.

Having made a study of the flora that causes the infection in the case in point, the next step is to make a vaccine either of the mixture of the organisms or of pure cultures of each organism. We are working in the dark when we attempt to give vaccines made from mixed cultures. If we use a mixed culture in preparing our vaccine we have billions of organisms that grow very readily on artificial

media, and few or none of the organisms that grow poorly and yet may be the true causative agents.

The dosage is another point that cannot be determined with any degree of accuracy in a mixed vaccine. For instance, we may give from one to two thousand million staphylococci at a dose, while it is very unwise and dangerous to give more than a few million of bacilli that are found in mucous membranes. If we use a mixed vaccine we cannot give enough staphylococci to be of any value, because we may be giving at the same time a dangerous dose of the bacilli.

A case of gingivitis had been treated by a dental surgeon with a stock vaccine without any result; in fact, the patient was getting worse. We examined the gums bacteriologically and found a very large number of small Gram-negative bacilli, a few staphylococci, and a very few Gram-positive bacilli, both large and small, but the preponderating organism was the small Gram-negative bacillus. The culture showed a luxuriant growth of staphylococcus. By careful watching we obtained finally a culture of the Gram-negative bacillus, from which we made a vaccine. The patient rapidly improved under the therapeutic use of this vaccine. Had we used a mixed vaccine our dose would have consisted largely of the staphylococcus which was not the predominating bacterium in the infection.

Dr. Joseph C. Beck:—I began my experiments about three years ago and then reported fourteen cases of ear, nose and throat infections of a chronic type, in which I used auto-vaccines of a different form of infection. Since then I have made subsequent reports, including about sixty cases in all. I am not now as enthusiastic as I was in the beginning, nor are my results as good, but I am encouraged by the therapeutic value of this measure, as an aid in the treatment of suppurative diseases of the nose and accessory sinuses.

The flora of the nose has been referred to. That is the one point of importance. The cultures we get are practically all staphylococci, but there are other organisms which possibly play a rôle in chronic infections, and if vaccines are not obtained from them, the results in many instances will remain negative. This has been brought forcibly to my attention in the cases of two physicians who had chronic infection of the nose. I had recommended auto-vaccines. Both made the vaccines by using the secretions as they come from the nose. Both men have studied Wright's work thoroughly, and they sterilized the vestibule of the nose, blew out the secretions, sterilized them, and without dosage or opsonic index injected the sterilized secretion. Great improvement followed in both cases, without any other treatment whatsoever. Both men suffered a great deal from local reaction at the site of injection.

Dr. Brawley reports cures. I would like to ask him how long it is since these cases have taken place? I have had cures because I paid attention to the local condition. The general condition is markedly influenced. The patient gains in body weight from the use of the vaccines. Stock vaccines are useful, especially those of the polyvalent type. They are made from thirteen different cultures and the mixture of aureus, albus and citreus gives the best results.

Dr. A. M. Corwin:—I want to congratulate Dr. Brawley on his enthusiasm in entering this new field—a field in which demonstration has been open to serious doubt. The fraternizing of laboratory and clinical practice is to be encouraged. However, I did not get the impression from the paper that Dr. Beck seems to have gotten, that Dr. Brawley claims a large number of cures as the result of vaccine therapy. He reports a number of improvements, but these occurred in cases in which the usual operative treatment looking toward better drainage and ventilation, and thorough irrigation had been given, and we all realize that even in chronic cases such improvement is to be expected. Then, too, many of his patients disappeared from view before definite results were obtained. It would seem as though, if vaccination will prove anything, it is to be applied in cases in which no other form of treatment is used, so that results can be noted with precision. Then, there are patients in whom, after ordinary operation, the chronicity of the symptoms continues. When can vaccine therapy do for these? It is only by having a large number of carefully tabulated cases that any conclusions can be drawn, and the negative reports in such cases are of as much value as are the positive ones.

We are too apt to follow up a thing that is seemingly curative, and report good results, and when we find a series of failures we are loath to publish them. The value of Dr. Brawley's paper will come five or ten years hence, if he continues to push his investigation; then more conclusive data can be presented. The paper is of little advantage except to stimulate our interest and focus our attention upon this newer field of investigation.

Dr. C. M. Robertson:—Dr. Corwin's remarks are discouraging, because, if all cases are followed to the very end, we must have 100 per cent. of failures, as all these patients will die some time. If a cure persists for one year, that is sufficient. Most of Dr. Brawley's cases occurred in 1907, and he knows as well as anybody when a cure has been effected.

Nothing was said about any vaccines except the auto-vaccines, and nothing was said of auto-vaccines being used that were not produced on the infected premises. All Dr. Brawley's cases except one were chronic cases, and even the exception was a case of five months' duration. Some cases had persisted from childhood. Most of them for six months or more. In all his cases he used the staphylococcus auto-vaccine.

To answer Dr. Corwin, I have had one case, a woman, who had a pansinuitis, and although she had an enlarged bulla that pressed the middle turbinal against the septum, and had hypertrophy of the middle turbinal that blocked the hiatus. I used the auto-vaccines to see what would happen. I started with 5,000,000 and doubled the dose every day when there was no negative reaction. If the temperature rose, I waited until the following day. I kept this up for ten or twelve injections, at which time the discharge had stopped. Then I waited for a month or two, had the patient report, and again after a year. There was no return of the discharge. In this case an operation was indicated to the extent of trimming the anterior end of the middle turbinate and opening the bulla and all sinuses that were involved.

I have had other cases in which I tried the auto-vaccines, and the point made by Dr. Lincoln was substantiated, that the germ causing the disturbance is the hardest to cultivate. I have never tried the smear examination, although I believe that that is where most of us have fallen down.

Some time ago Dr. Gehrmann told me that he could make an auto-vaccine from any germ injected and get results. I have had some experience in that direction. I have had cases where there was no appreciable change in the discharge, and in one or two the application of a strong solution of argyrol stopped the discharge. Trimming the turbinate and opening the tracts has produced results where auto-vaccines fail.

I have also tried the bacillus bulgaricus and obtained results when every other organism failed, so that it seems to me we are just on the threshold of learning something about this subject. We are getting reports from men who know, and after we get a few more data we will be able to see what cases can be relieved by this method of treatment, and those where the treatment is not indicated.

Dr. Henry Gradle:—Of fifteen instances of sinus and ear disease in which I have used the vaccines, some of the cases have not been followed sufficiently to state permanent results. A number have shown no benefit, evidently on account of insufficient drainage. Among them were several in whom a rise in the opsonic index was measured by Dr. Lincoln, and yet the clinical condition was not influenced. The healing tendency started by vaccination is not sufficient to lead to results when there is an interference with the free escape of the pus. The most positive instances I have seen are the following: A girl having had for a long time a purulent discharge of chronic ethmoiditis got an acute mastoiditis requiring operation. On account of exposure of the sinus and a doubt whether the diploetic cells had been cleared sufficiently, I gave her four injections of staphylococcus which had been found in the mastoid discharge in intervals of a week. There was prompt healing of the mastoid wound and at the same time the ethmoid discharge containing also staphylococci ceased permanently after having resisted previous conservative treatment.

The second fairly demonstrative instance was a one-sided maxillary empyema dating back nearly a year, but causing no local symptoms except discharge. The patient came on account of a fresh retino-chorioiditis on the same side. Since no other cause could be learned, it seemed reasonable to consider the eye disease secondary to that of the antrum. (I have published last year four observations of this character in which this relationship was quite conclusively shown in two.) An attempt to perforate the nasal wall of the antrum was abandoned at the patient's request, when the bone was found unusually thick. A few staphylococcus injections were given on finding this germ, whereupon the nasal suppurations disappeared gradually. The retina-chorioiditis healed likewise. But from the clinical course one could not say positively that the cure of the eye disease had been brought about by the vaccination.

In a case of subacute frontal sinuitis staphylococcus injections, combined with the usual nasal treatment, had apparently no effect until I removed the front end of the middle turbinal. Notwithstanding considerable relief from the pain after the operation, the discharge changed but very little until I resumed the vaccine treatment, when it finally ceased. In an instance of multiple sinuitis I had exposed the antrum by almost complete removal of its nasal wall and could hence look into it. The staphylococcus and the pyocyaneus were found and the vaccine treatment with both germs was thoroughly tested under the guidance of the opsonic measurements made by Dr. Lincoln. But it proved of no influence whatsoever, although in this instance the antrum at least had absolute drainage.

A physician had a persistent suppuration through a small perforation in Shrapnell's membrane. There was no odor and a very trifling seropurulent discharge which did not yield to the usual treatment (gauze-drainage and boric acid). Staphylococci were found present. He had an autogenous vaccine made and three injections cured the discharge. Yet I have had several cases of similar character in which negative results were obtained.

We must always assure ourselves that in every case drainage is not interfered with and that there is no mechanical impediment which dams back the discharge before we can expect to get any results from autovaccination. Moreover, we are not at all sure as yet that the principle of autoinoculation with the germ causing the disorder is appropriate in all cases of infection. It has been shown to be true of the staphylococcus and some other germs, but whether it applies in the case of all germs is a question still to be solved.

Dr. A. H. Andrews:—My impression is that so long as we employ this or any other plan of treatment indiscriminately, we will have a large percentage of failures. After all, the most important thing is the pathology present, and the treatment to be efficient must be adapted to the pathology. I am inclined to think the usual method of syringing these cavities is not as good as some other plan of treatment, especially when there is no definite obstruction to drainage or any necrosis of the bone. My own experience in these cases is that they have gotten along far better when the pus has been blown out of the cavity with compressed air, followed by some mild medication, than when I used the syringe.

DISCUSSION.

Dr. J. Holinger:—The bacteriologist spoke about the difficulty of finding in some cases the micro-organism which causes certain forms of suppuration in the nose. Did he ever find absolutely sterile secretions? The question as well as the answer it found is interesting.

Patient A has an old suppuration of the nose which necessitated several operations on the turbinals as well as on the sinuses, and the passing of several winters in California. Whenever A visited B, B acquired an acute coryza with local and pronounced general symptoms. In the course of a year four distinct attacks of this kind were observed. The secretions of the nose of A were examined once, and those of B twice, and smears as well as cultures in all the three examinations were found absolutely sterile. We have, therefore, the paradox of a suppuration of the nose which is very infectious, but has sterile secretions. Here is the solution: B noticed on certain mornings a thick clot of secretions in the nasopharynx which were rusty throughout and sometimes had fine streaks

of blood. On examination pure cultures of pneumococci in great numbers were found, and B as well as A were pronounced pneumococci carriers by the bacteriologist.

Dr. Brawley (closing):—I simply intended to present a preliminary report of the results I have had in a few cases. They were early cases and my observations were not as accurate then as they are now. One case in which I operated on the sphenoid and ethmoid cells I have seen occasionally, and the patient tells me she has not had an attack of cold since the vaccine treatment. though that autumn and winter colds had been a frequent occurrence with her previously.

I have the histories of about thirty cases which have not been watched long enough to report on at this time. One thing I have noticed is the results obtained in what I call the subacute cases—cases that have run a few months or less than a year. There seems to be something about the chronic cases that walls the sinuses off, as it were, from the general circulation. I have never seen the pathology which would explain this, but I have seen the clinical manifestation often. I know that various kinds of vaccines have been used and results have been obtained that could not be explained entirely by the sort of organism used. I take it that many of these cases have been helped by the stimulation of the ductless glands which was given by the toxins. These vaccines are carefully heated to 60 C., in order not to destroy the toxins which have the property of acting on the ductless glands entirely independently of the production of auto-vaccine within the blood serum. I have seen that clinically for years in the improvement of the general health which follows such infectious diseases as typhoid. That, I think, will likely explain a number of cases where we have gotten good results, even when the organisms employed were not the proper ones.

PHYSIOLOGIC VESTIBULAR NYSTAGMUS.

J. R. Fletcher, M.D.

(Abstract.)

Nystagmus (eye movements alone meant) may be divided into two types—vestibular and ocular. It is necessary to distinguish sharply between them in order to avoid error. The characteristics of each are as follows:

VESTIBULAR.	OCULAR.
Rhythmic movements, of equal excursion but of unequal velocity.	Undulating eye movements of equal excursion and velocity.
Has two components, quick in one direction, slow in the other.	No quick component.
Increases when gaze is directed to side of quick component; decreased or stopped when directed to side of slow component.	Not increased by gazing to either side, but ceases with fixation of vision in any direction.
Does not cease when eyes are closed.	Ceases when eyes are closed.
It is either horizontal, rotary, vertical or compound.	Never compound or rotary.

The vestibular apparatus is the chief organ of equilibrium. Each canal produces nystagmus in its own plane. The end organ of the vestibular nerve functionates when the endolymph contained in a membranous canal flows against its cupula. Motion of the cupula causes tension of the hairlike epithelial prolongations of the cells of the crista ampullaris. This tension causes a sensation which is transmitted through the vestibular nerve to Deiter's nucleus and is there interpreted and notice sent to the auxiliaries of the equilibrium that the vestibular apparatus is functionating. These auxiliaries are sight and the muscular sense.

The direction is designated by the quick component, as this is the most obvious. In reality the slow is the vestibular component. The quick comes from the gyrus angularis, and is a movement of recover or counter motion.

Nystagmus by Turning (Dreh Nystagmus) has three stages: Primary, during turning; after-nystagmus, immediately after turning ceases; ultimate nystagmus which sometimes follows after-nystagmus. Nystagmus during turning is in the direction of turning; after-nystagmus is in the opposite direction of turning

except when the head is inclined 90 degrees backward. When ultimate nystagmus occurs it is in the same direction as the primary, but is very slight and of short duration.

The plane of the nystagmus depends upon the position of the head during turning. Flourens showed that the horizontal is the typical functionating plane, therefore the canal or pair of canals which we wish to excite by turning must first be brought approximately into the horizontal plane. For example, when the head is placed forward at an angle of 90 degrees to the vertical, the anterior vertical canals are about in the horizontal plane. Turning in this position will produce a pure rotary nystagmus. At 45 degrees forward the result will be a compound nystagmus, horizontal and rotary, etc.

Caloric Nystagmus is produced by application of heat or cold to the tympanic cavity. Heat produces nystagmus to the heated side; cold to the opposite side. The plane of the nystagmus from heat is rotary, from cold compound, horizontal or rotary. When temperature equal to that of the body is applied, there is no reaction. When higher or lower temperature than that of the body is applied to both sides at the same time, nystagmus occurs to either side by looking in the extreme lateral direction. It ceases immediately upon fixation of vision straight ahead. Accompanying symptoms, vertigo, nausea and vomiting are quite frequent in rotary nystagmus.

Seeming movements of near-by objects, or of the body of the nystagmatic person are not uncommon in all kinds of nystagmus.

Galvanic Nystagmus: Cathelectrotonus produces nystagmus to its own side. It equals heat in caloric nystagmus. Anelectrotonus produces nystagmus to the opposite side and is equal to cold in caloric; 2 to 4 ma. are required when both electrodes are placed on the head; 20 to 24 ma. when one is by the ear and the other in hand of the same side.

Vestibular Ataxia: Reactionary body movement is always in the opposite direction to the quick component. The plane of falling must be considered with relation to the earth. Manifestly one cannot fall in the horizontal plane; therefore, horizontal nystagmus produces no reaction. If, however, rotary nystagmus is made horizontal (with relation to the earth), by bending the head 90 degrees forward reactionary body movement will take place in the plane of the nystagmus (with relation to the head), viz., rotation. The ataxia bears no relation to the intensity of artificially produced nystagmus.

A Theory of Synchronism: It is impossible for me to conceive one canal functionating while its fellow of the opposite side is at rest, because in nystagmus by turning both cupulæ are moved by the flow of endolymph at the same time and in opposite directions. There must, therefore, be a direction of greatest and one of least physiologic activity. That canal governs in which the movement is in the direction of greatest physiologic activity. There is a position of rest when neither is functionating. I accept turning and the caloric test as a better index to the direction of greatest and least physiologic activity than the experiments of Ewald and Hogyes, as the latter involve trauma and violence. Cold produces compound nystagmus to the cooled side, which is stronger than that by heat. It is, therefore, plus. The cupula in the anterior vertical canal moves toward the utriculus; in the horizontal, away from it. These directions must, therefore, be the greatest physiologically. In turning to the right the endolymph moves from the utriculus into the open mouth of the left ampulla and downward in the horizontal canal. The impact here, during turning, is consequently greater than in the right, as the endolymph must flow upward through the ampulla to the utriculus. During turning the left dominates; after turning the flow is reversed and the right dominates. It is more than probable that the same principles govern the posterior vertical pair, modified only by the anatomic positions of the canals and their cristæ.

Dr. George E. Shambaugh takes exception to Dr. Fletcher's so-called "theory of synchronism" that the semicircular canals never act separately, but always in pairs, and that the direction of the nystagmus resulting from overstimulation is always determined by that canal of the pair in which the flow of the endolymph

is such as to produce the greatest physiologic response. The fundamental facts in the physiology of the semicircular canals underlying this question are: First, that the flow of the endolymph always results in a greater stimulation when moving in one direction in a canal than when moving in the other; second, that the direction of greatest response is not the same in all the canals. In the horizontal canals the greatest response is elicited when the endolymph moves from the ampulla toward the small end, whereas in both the superior and posterior canals the greatest response is obtained when the endolymph flows from the small end toward the ampulla; third, that the ocular manifestation resulting from the motion of endolymph in any canal is a slow movement of the eyes in the plane of the canal and in the same direction as the motion of the endolymph, and a quick movement of the eyes in the opposite direction.

Why it is that the greatest stimulation of the horizontal canal results when the endolymph flows from the ampulla toward the small end, and of the superior and posterior canals when the flow is from the small end toward the ampulla, we do not know. Dr. Fletcher has suggested two explanations. In one place he states that the force of gravity is the determining factor, because in the superior canal the flow of the endolymph from above downward to the ampulla results in this canal in a greater stimulation than when the endolymph moves from the ampulla upward. As a matter of fact, it is not clear that gravity can play any part in the motion of endolymph in closed canals filled with this fluid. In another place he states that the flow of endolymph into the wide-open ampullar end results in a greater stimulation than a flow in the opposite direction. This explanation could apply only to the horizontal canals, for in both the posterior and superior canals the greater response is produced when the endolymph flows from the smaller end toward the ampulla.

If one keeps in mind the fact that the direction of nystagmus is determined by the direction of the flow of endolymph in this or that canal, irrespective of whether the particular canal is stimulated in the direction of its greatest physiologic activity or not, a theory of synchronism, as Dr. Fletcher proposes, is in no way necessary to explain the phenomena of nystagmus. Suppose a person in the upright position is turned to the right, causing a flow of endolymph in the horizontal canals, the direction of the nystagmus during turning will be toward the right, because in both of the horizontal canals the direction of the flow of endolymph will be such as to cause nystagmus to the right. For example, in the right horizontal canal, when turned to the right, there will be a flow of the endolymph from the small end of the canal toward the ampulla, the direction of least physiologic activity. Such a response will produce nystagmus to the right. At the same time, in turning to the right, the flow of endolymph in the left horizontal canal will be from the ampulla toward the small end, the direction of greatest physiologic activity for this canal. This direction of the flow of endolymph in the left horizontal canal will also produce nystagmus to the right. To assume that it is the left canal alone that determines the direction of the nystagmus, simply because it happens to be this canal that is stimulated in the direction of its greatest physiologic activity is unnecessary. The direction of the nystagmus in turning is determined by both of the canals pulling in the same direction. The error in his argument is made still more apparent in cases where the left labyrinth is destroyed. Here the nystagmus on turning the patient to the right is still directed to the right, determined, of course, by the stimulation of the right horizontal canal, although this canal is now stimulated in the direction of its least physiologic activity. An equally serious error is where he attempts to apply his theory of synchronism in explaining the nystagmus resulting from the stimulation of the labyrinth with hot or cold water. He asserts, for example, that in syringing the right ear with warm water the nystagmus is towards the right, not, however, because of the flow of the endolymph in the right superior canal, since in this canal the flow would be from the ampulla towards the small end, that is in the direction of least physiologic activity for this canal. He asserts that the direction of the nystagmus to the right, in this case is determined from the opposite (left) ear, where he assumes that a flow of the endolymph also

takes place, but in such a direction as to result in producing the greatest physiologic response, that is, from the small end to the ampulla. Here, in order to make results conform with this theory, that the direction of the nystagmus is determined by a canal which is stimulated in the direction of its greatest physiologic activity, Dr. Fletcher is forced to assume that when hot water is syringed into the right ear stimulating the superior canal on this side in the direction of its least physiologic activity, it produces at the same time in some mysterious way a motion in the endolymph in the left superior canal in an opposite direction, so that this canal will be stimulated in the direction of its greatest activity, thus allowing it to determine the direction of the nystagmus. The impossibility of such a claim is apparent without the demonstration that when the left labyrinth is destroyed and the right ear syringed with hot water the direction of the nystagmus is still to the right, although here this direction must be determined by the right canal alone, which is being stimulated in the direction of its least physiologic activity.

In his discussion of the pairing of the canals of opposite labyrinths the inference is that the superior on one side is paired with the superior of the other: as a matter of fact, it is only the two horizontal canals that seem to be paired in this way, since anatomically the superior canal on the one side lies in a plane parallel with the posterior canal of the opposite side.

Dr. Norval H. Pierce:—The question regarding the current of the endolymph being the agency by which the crista is stimulated is a very ancient one. There can be no flow of endolymph in such a non-compressible fluid without some space to take up the flow. It is a physical impossibility for flow to occur. That the semicircular canal may react without such a flow being possible is proved in cases where both crura of a semicircular canal is entirely cut through during operations. All the phenomena of static disturbance occur immediately after such an accident. If infection does not intervene, the semicircular canal heals with its caliber obliterated at the two points of severance. And yet in a number of these cases in which the semicircular canals have been cut normal function has been reestablished in them. Physicists hold that this stimulation was determined by molecular movements and not by mass movements of the endolymph. After reading over von Stein's book on the internal ear, one would believe it impossible to advance anything of a hypothetical nature that would be new in explaining the actions of the semicircular canals. However, the matter is not closed. The majority of physiologists to-day believe that there is interreaction between all the semicircular canals all the time, and if we go over the relationships which exist between the various movements of the crista, we will see that they are wonderfully planned, in order that vertigo shall not occur in any of the movements of ordinary life. If, for instance, the highest physiologic activity was possessed by the hairs of the superior semicircular canals, when they are directed toward the utriculus, we would be dizzy whenever we shake the head. The highest physiologic activity occurs when the hair cells of the superior canals are directed upward and downward in the horizontal canals. This interrelation must of necessity be so because otherwise we would be dizzied most of the time. Without accepting the hypothesis that space is absolute, I advocate the belief that the crista react to rotation, or angular acceleration, just as the retina reacts to light. Not only are they physiologically active when the body is turned in any particular direction, but they are always in a state of tonicity. This explains why, if cold water is syringed into the right ear, we get nystagmus toward the left, because the hairs in the right static apparatus are directed toward the direction of least physiological activity, and the hairs on the other side are in a relatively higher state of activity. We thus see that not only the semicircular canals on the same side react one on the others, but that those on one side are corelated to those on the opposite side. This functional corelationship is accomplished by the means of the centers in the cerebellum and pons. This is the modern view of the physiology of the semicircular canal system, and is of the greatest value in our clinical work.

Dr. A. H. Andrews:—I would like to take exception to one statement which Dr. Fletcher makes, namely, that in the caloric test it is the motion of the endo-

lymph in the horizontal canal combined with the motion in the superior canal which produces the rotary nystagmus. It is true that if the zygomatic arch is taken for the horizontal line, the back part of the horizontal canal dips a little, but if Reid's base line is taken for the horizontal line the posterior canal does not dip any at the back. Whether the patient inclines his head forward or backward or holds it so that the canal is horizontal, we get the rotary nystagmus just the same. I believe the man who knows the most about this subject has a good deal yet to learn, and that the rest of us know comparatively little about it. We have a long way yet to travel before we will thoroughly understand the subject under discussion, but the progress which is being made is in the right direction.

Dr. Fletcher (closing discussion):—As to the misunderstanding which exists between Dr. Ballenger and myself, it is easily explained. Dr. Ballenger speaks of the stimulation of a particular side of a crista, while I spoke of the crista of one or the other side of the head, referring to the synchronous action existing between the pair, right and left.

I do not agree with Dr. Shambaugh that Ewald's experiments are conclusive. He showed, however, that it is the flow of endolymph which moves the cupula and causes the nystagmus. Hoyges produced endolymph movement and displacement of the cupula by introducing a hypodermic needle into the cavity of the utriculus. If there is not a current in the membranous canal slight motion, at least, occurs momentarily. Gravity probably aids the flow. The greatest impact is against the crista on the side opposite to the direction of turning during turning, as the largest part of the endolymph is in the utriculus. When this body of fluid moves to the ampulla from the utriculus it must make more tension in the ampulla than elsewhere. After a moment the endolymph and fixed canals move at the same velocity. When the turning is stopped after, for example, turning to the right, the endolymph moves on in the direction of turning into the mouth of the right ampulla against the crista, causing the greatest impact there, displacing the cupula toward the canal.

The level of the indifferent and ampullary ends of the horizontal canals are not always in the same plane. Sometimes the indifferent ends are lower.

There are two directions of physiologic activity of the cristæ, but unequal. While the vestibular apparatus of both sides exist, they act together synchronously, the strength of action of one being stronger than the other.

When we syringe the right ear with cold water the result is the strongest vestibular action in this ear, the weakest in the other. Some reflex actuates the left, perhaps vasomotor change. When hot water is used the least physiologic activity is in the syringed ear.

JO DAVIESS COUNTY.

The Jo Daviess County Medical Society met in the Odd Fellows' Hall, Elizabeth, Ill., at 1 p. m., April 21, 1910, with a fair attendance.

Dr. Czibulka notified the society that he could not attend the state meeting whereupon Dr. Nadig was elected delegate with Dr. D. G. Smith as alternate.

A committee was named by the president to draw up and recommend to the society at the next regular meeting such changes and amendments to the constitution and by-laws as might be necessary.

The society instructed the president and secretary to send resolutions of approval and appreciation to Senator Owen for his earnest work towards the establishing of a department of public health and also asking our representatives to use their efforts to pass the bill for this purpose.

It was also decided that all members who had not paid their dues should be dropped from THE JOURNAL mailing list.

The Stockton Division invited the society to meet in their city in July and bring their ladies and sweethearts with them.

The scientific program was then taken up and Dr. Cottral reported two interesting cases, after which Dr. Milton H. Mack of Chicago delivered a very inter-

esting lecture on "Dilatation of the Stomach" and laid much stress on colonic flushing in these cases.

Dr. H. T. Walker of Dubuque read a paper on "Why Secondary Operations Should be Insisted Upon in Appendiceal Abscesses," with the report of several cases. The above subjects were discussed by nearly all members present and a great deal of good was obtained.

The society felt very grateful to Drs. Mack and Walker for the many valuable points given out.

The society then adjourned to the Commercial Hotel, where dinner was served.

D. G. Smith, Secretary.

LAKE COUNTY.

The Lake County Medical Society met, April 11, 1910, at the Gables, Waukegan. In the absence of the president, Dr. L. H. Tombaugh took the chair and Dr. W. C. Bouton was appointed secretary pro tem on account of the absence of the secretary. It was moved and seconded that the president and secretary act on the drug act according to their discretion, representing the society. Carried. Moved, seconded and unanimously carried to elect Dr. J. C. Foley, Waukegan, as delegate to the State Medical Society meeting. Moved and seconded and carried to appoint Dr. John L. Taylor of Libertyville as alternate to the State Medical Society meeting. On investigation by taking the census of those present, it was found that of the ten present but two carried protection against mal-practice suits other than that provided by the state society. Moved and seconded to have the president appoint a member of the society to be on the medicolegal committee of the State Medical Society. Motion carried. Moved, seconded and carried that the chair appoint a committee of six to investigate conditions at the County Alms House. The chair appointed the following physicians: Drs. Elva Wright, W. C. Bouton, J. C. Foley, E. H. Ames, M. J. Kalowsky and L. H. Tombaugh. The resolutions of the Tazewell County Medical Society were read but no action was taken on the matter. On account of the late hour most of the program for the evening was postponed to a future meeting. However, a paper by Dr. Proxmire of Lake Forest was read and discussed, on the subject of "Vibrotherapeutics."

Those present were Drs. Tombaugh, Bouton, Foley, Gourley, Gavin, Kalowsky, Turner, Ames, Proxmire, Elva Wright and Roberts.

Adjourned.

W. C. Bouton, Sec. Pro Tem.

MORGAN COUNTY.

A regular meeting was held at the Public Library, Jacksonville, March 10, 1910, at 8 p. m. Dr. Grace Dewey presided. Members present: Drs. Milligan, V. Dinsmore, Dewey, Ogram, Leonard, King, Gailey, Adams, Black, Cole, McLaughlin, Hardesty, Crouch, Pitner and Stacy. Dr. A. R. Gregory, late of the University of Michigan, and Miss Beatrice Foster, assistant medical librarian, were visitors. The names of Drs. A. R. Gregory and William H. Weirich were put up for membership and were given the censors for their investigation. Dr. Moyer's question as to how many carried malpractice insurance was put and only three of those present had such insurance.

Dr. Black reported a case of gangrene of the sigmoid and descending colon following herniotomy. Sixteen inches of colon and sigmoid were returned to the abdominal cavity in apparently good condition. A rather large free bowel movement seemed to indicate that everything was going well, but subsequently patient developed symptoms of obstruction and local peritonitis and died. Partial autopsy revealed the gangrenous condition.

Dr. Leonard reported a case of general paresis in which he had used muscular injections of bichlorid of mercury. Symptoms for a time were greatly improved, but subsequently the patient succumbed.

Dr. McLaughlin reported a case of peritoneal tuberculosis in which Moro's ointment test was positive as a diagnostic sign. He also reported a case of juvenile diabetes.

Dr. Charles E. Cole read a paper on measles. This would seem to be rather a trite and hackneyed subject, but locally, this winter it has proved both interesting and disastrous, fourteen deaths in December being due to the disease proper or its complications. He considered the disease in all its aspects, briefly but succintly. It is regretted that we do not know more about the etiology so that eradication measures should be taken.

Dr. King made a few remarks concerning this disease from the standpoint of municipal control. He was well pleased with the cooperation shown by the physicians in notification of measles cases given to his office during the past winter. On the other hand, the doctors who discussed the remarks, Dr. Cole and Dr. King, were also well pleased with the work of the City Health Physician in his efforts to control the measles epidemic.

The report of the committee on contagious diseases was received and adopted and is as follows: Your committee appointed at the last regular meeting, to investigate and make recommendations concerning the placarding and quarantine or isolation of contagious diseases, respectfully submit the following report, that the following diseases be placarded: all forms of measles, whooping cough, chicken pox and mumps.

Section 1.—Measles: That the period of isolation be three weeks from the invasion. That all children exposed be isolated for sixteen days. Whooping cough: That the period of isolation be six weeks from the invasion, or as long as spasmodic cough lasts, or cough and expectoration. Chicken pox: Isolation should continue until the crusts have dropped off. Mumps: Isolation should continue until ten days after swelling of glands disappears.

Section 2.—That all physicians report to the health warden for the purpose of keeping a record, all cases of tuberculosis and their place of residence. Also that all premises occupied by persons having tuberculosis be disinfected after removal.

[Signed.] A. L. Adams,
Josephine Milligen,
T. O. Hardesty.

In connection with this report, the committee presented data compiled from the leading authorities on the disease mentioned which formed a basis for their report. The report was freely discussed before its adoption. A motion was made, seconded and carried that the committee continue to work and that a copy of the report be made and circulated among the members for their signature to an agreement to report the diseases mentioned to the city health physician and that a signed copy of the report be placed in the hands of the city health physician, after which the society adjourned.

Regular Meeting, April 14, 1910.

The society met Thursday, April 14, 1910, 8 p. m., at the Dunlap House, Jacksonville, Dr. Grace Dewey presiding. Members present: Drs. Adams, Baker, Black, Bowe, Campbell, Cole, Crouch, Dewey, Duncan, Gregory, Hairgrove, Hardesty, Hinton, King, Milligan, McLaughlin, Norris, Pitner, Stacy, Stubblefield, Vertrees, Webster, Weirich and Woltman. Visitors: Drs. M. L. Harris, Chicago; L. J. Harvey, Griggsville; L. E. Orr and G. A. Lightle, Tallula; J. H. Spencer and W. A. Wesner, Murrayville; and W. W. Crane and L. H. Clampit, Jacksonville.

Dr. J. U. Day, Jacksonville, was nominated for membership. Drs. William H. Weirich and Abraham R. Gregory, Jacksonville, were elected members. The letter issued by the council relative to medical education and licensure in Illinois was read and considered question by question. The society lined up as a unit for progressiveness along the lines suggested by the council. Gifts to the library from Drs. C. E. Cole and P. E. Hofmann were reported. A change in the by-laws providing for election of a temporary delegate when necessary by members present at the state meeting was proposed.

Dr. M. L. Harris of Chicago was present at the invitation of the society and gave an interesting presentation of "Abnormal Mobility of the Liver," of which the following is a résumé: Forms of mobility: 1. General mobility associated

with other floating viscera as in Glenard's disease. 2. Constriction and increased mobility of a part or the whole of either the right or the left lobe. 3. Cross furrowing and lobe formation from constricting bands or from the effect of posture and work.

Diagnosis of the condition is often not made until operation is being executed for other conditions such as gall-stone disease and floating kidney. It is quite important to outline the area of liver dulness with the patient in several positions; sitting up, recumbent in left and right positions, fluctuation of dulness on change of position being characteristic as a rule. The exception is where the once movable liver has become tied up somewhere by adhesions. The transverse furrow formation does not necessarily follow tight band wearing or improper corset lacing but is often seen in little round women, being produced by bending and pressure. Symptoms vary from slight digestive disturbances to pain, fever and vomiting.

Treatment: The object of this is to limit the mobility of the organ. This is done by somewhat the same procedure as is used in anchoring a kidney. The ventral surface of the liver is freshened by scraping, catgut sutures that fit the needle tightly are passed straight through the liver and underneath it and hammock fashion are passed back through again, being then anchored as high up as possible in the anterior abdominal wall. The same procedure is practiced in all three forms of mobility. Dr. Harris cited quite a number of cases operated on with satisfactory results. The paper was much appreciated and freely discussed by a number of the physicians present, and a vote of thanks was given the Doctor for his presentation.

Under the head of new business the question of the desirability of the city's taking its water supply from some comparatively shallow wells near the Mauvaisterre Creek, north of the city, which takes away the city sewage, was brought up for consideration. The society went on record unanimously as of the opinion that the site for such a municipal supply was undesirable. The meeting was preceded by an informal dinner at the Dunlap House.

While here, Dr. Harris also spoke at a business men's luncheon on "The Desirability of a National Board of Health with Representation in the Cabinet."

Adjourned. GEORGE STACY, Secretary.

ROCK ISLAND COUNTY.

The regular bi-monthly meeting of the Rock Island County Medical Society was held at the New Harper Hotel, Rock Island, April 12. After dining, the members retired to the hotel parlors and the business of the evening was taken up. The minutes of the February meeting were read and approved. This being the annual election meeting no scientific program was prepared. Messrs. H. O. Rolfs and M. W. Battles, Jr., a committee from the Rock Island County Druggists' Association were present to confer in regard to the second annual "Get Together" meeting of the physicians and druggists. The proposition was approved of and President Ludewig appointed Drs. F. H. First, F. H. Gardner, and J. J. Tremblay as a committee to meet with the druggists and arrange for the date and plans of the meeting. Experience having shown that the annual dues of $4.00 were insufficient to meet the expenses of the society, thereby always necessitating several special assessments, an amendment to the constitution to change the $7.00 per annum was brought up and was carried by the necessary two-thirds vote. Dr. E. M. Sala of the committee on the "Open Meeting" reported the completion of their work, and they were then discharged with thanks. The committee on the establishment of a County Society Medical Library reported that the Augustana College authorities were in favor of it being located in the new Denkmann Memorial Library building, and that they would provide the necessary room and other assistance. It was decided that the proprietorship of the books be vested in the Augustana College and in case of the disruption of the same at any time, that the ownership revert to the Rock Island County Medical Society. The report was

accepted and the committee was continued. It is planned to build up the library gradually with donations and bequests of medical books and journals. There is no doubt that in a few years the society will have an excellent library that will compare favorably with the best in the country. In the absence of the regularly elected delegate and alternate at the state meeting, it was decided that the members present be empowered to elect a representative from their number to represent our county. U. S. Senator R. L. Owens' bill, No. 6049, which provides for a Federal Department of Health, was endorsed and the secretary was ordered to communicate such to Senators Cullom and Lorimer and Representative J. McKinney, of the Fourteenth District.

The annual election of officers resulted as follows: President, Dr. H. S. Bennett, Moline; first vice-president, Dr. W. L. Eddy, Milan; second vice-president, Dr. J. E. Asay, Rock Island; secretary, Dr. Albert N. Mueller, Rock Island; treasurer, Dr. A. T. Leipold, Moline.

The retiring president, Dr. W. H. Ludewig, was elected 1910 delegate to the state meeting and Dr. J. R. Hollowbush the alternate. After giving the retiring officers a vote of thanks the meeting adjourned. Members present were: Drs. W. H. Ludewig, J. R. Hollowbush, G. L. Eyster, C. T. Foster, A. J. Miller, W. L. Eddy, E. M. Sala, A. T. Leipold, B. J. Lachner, J. J. Tremblay, H. J. Love, A. N. Mueller, J. T. Lamping, F. H. Gardner, J. C. Souders, J. E. Asay, L. Ostrom, S. B. Hall, F. H. First, C. A. Peterson, W. D. Chapman and W. D. Snively .

ALBERT N. MUELLER, Secretary.

TAZEWELL COUNTY.

At the meeting of the Tazewell County Medical Society on April 12, 1910, the following officers were elected: President, Dr. H. V. Bailey, Pekin; vice-president, Dr. H. A. Zinzer, Washington; secretary-treasurer, Dr. F. C. Gale, Pekin.

VERMILION COUNTY.

The Vermilion County Medical Society met April 11, 1910. Dr. Benj. Gleeson called the house to order at 8:45 p. m. The minutes of the previous meeting were read and adopted without any alteration.

Dr. H. F. Dice of Ridgefarm read a very interesting paper on "Traumatic Neurosis from a Medicolegal Point of View." It was an excellent paper. The society was much interested. A number of cases received by the author demonstrated how these patients feign injury in order to extort money from those whom they hold responsible for the injury. The paper was well presented and was freely discussed by the following members: Dr. Cooley followed by Drs. Walton, Glidden and Williamson, and the discussion was closed by the author. Dr. C. H. Evans was to have presented the next paper, "Neurosis from a Medical Point of View," but as he was not present and had not sent in his paper, it was not called for. Owing to the late hour and the desire to give our guest, Dr. J. A. Egan, an opportunity to speak, Dr. E. E. Clark moved, and it was seconded, to defer the reading of his paper till a future period. The motion was amended by substituting the phrase, "till the next meeting" for the words "till a future period," was seconded and carried.

At this point Dr. J. A. Egan, secretary of the State Board of Health, and Dr. Wason, the head of the Bacteriological Laboratory at Springfield, were introduced.

Dr. Egan made quite an interesting and spirited talk. He said that he and Dr. Wason were here for the purpose of arranging the establishment of a temporary laboratory during the state meeting, May 17, 18 and 19, this year. He said the purpose of the laboratory is to show us what they have done and are

doing at Springfield for the state of Illinois. He explained some of the duties of the State Secretary, and methods of conducting the state license examinations.

It was moved, seconded and carried to adjourn. Members present: Drs. Taylor, Becker, Williamson, Kingsley, Clements, Dice, Glidden, Hooker, Fisher, Clinch, Poole, M. Downs, Babcock, Clark, Dale, Wilkinson, Hatfield, Walton, Cooley, Steeley, F. N. Cloyd, R. N. Cloyd, Crist, Baldwin, Baumgart, Chaffee, Joseph Fairhall, Cochran, S. W. Jones, McIntosh, Solomon Jones, Gleeson, J. A. Egan and Wason, guests, of Springfield (36 in all).

SOLOMON JONES, Secretary.

WHITESIDE COUNTY.

The Whiteside County Medical Society met at Sterling, Feb. 9, 1910, being called to order by the president, Dr. Frank Broderick. After a brief opening session the society adjourned and enjoyed an hour in informal discussion during lunch. Upon reconvening a motion to continue the delegate question until next meeting was passed.

Dr. Frederick Tice of Chicago then read a very able paper on the "Treatment of Croupous Pneumonia." This paper was much appreciated by the members of the society in that the doctor's outline of his treatment was more concise and definite than is usually found in so difficult a subject.

In discussion Dr. Beard commended Dr. Tice's paper. Dr. Allen stated that in tympanitis he used emulsion asophetida by colonic flushing. Dr. Tice formerly used asophetida but now used normal salt solution by interrupted method 4 to 6 oz. every 6 hours preceded by alum injection.

Dr. F. J. Keefer cited case of a child seemingly *in extremis* in which colonic flushing in two hours reduced the rapidity of respirations one-half. Dr. Wahl did not agree that three days should not elapse before instituting medication for stimulation. Dr. Tice correcting Dr. Wahl stated that he did not say general medication but medication for stimulation. Dr. T. Allen of Rock Falls read a paper on "Colonic Atony." This was one of the most able papers ever read before the society and showed how a busy general practitioner by an extra effort when thoroughly interested in his work can take a series of similar cases and by systematic scientific treatment and observation arrive at certain conclusions and obtain results. In his association with the late Dr. Byron Robinson he stated that this was the doctor's main method of handling female cases and that 47 per cent. of those who came up for operation escaped. His own series of 100 cases of uncomplicated atony of the colon, gave recoveries, 84 per cent.; partial recoveries, 9 per cent., which means returning to treatment at times; failures 6 per cent., due possibly to changes in the musculature.

Dr. Tice:—The subject of the toxemias is an interesting one and to intestinal intoxication can often be traced headaches, various nervous conditions, enlarged livers, etc. Especially is this the case among the desk and sedentary workers of the cities. Another cause of these conditions is lack of public conveniences.

Dr. Beard:—A motion to incorporate in the by-laws an amendment to the effect that for a member of the county society to be in good standing he must have attended at least two meetings of the society within the fiscal year. After a general discussion motion was carried and secretary instructed to send copy to each member of society.

Drs. Allen and Parker endorse an existing by-law and ask that it be enforced, requiring that papers which are to be read before the society be sent to the secretary at least two weeks before meetings. A discussion of the county fee bill followed. Dr. Beard made a motion that the mimeograph copies of fee bill as presented by the committee be made and sent to each physician in the county for their correction. Carried. Dr. Frederick Tice of Chicago, on motion of Dr. Broderick, was made an honorary member of the Whiteside County Medical Society.

The following members were present: Drs. Smith, Anthony, J. F. Keefer, J. R. Keefer, Beard, Parker, Perry, Broderick of Sterling, Drs. Horner and Wahl of Tampico, Drs. Fitzgerald, Maurits and Sullivan of Morrison, Drs. Allen and Dow of Rock Falls.

E. P. SULLIVAN, Secretary.

WILL COUNTY.

The annual meeting of the Will County Medical Society was held at Hobbs' Cafe, Joliet, Tuesday evening, Dec. 14, 1909. After a 6 o'clock dinner, Dr. Fenton B. Turck of Chicago spoke on "The Diagnosis and Treatment of Diseases of the Stomach," and Drs. A. E. Halstead of Chicago spoke on "Surgical Diseases of the Stomach." After the discussion of these papers the officers for 1910 were elected as follows: President, Dr. Philip Le Sage; vice-president, Dr. Aloysius J. Lennon; secretary-treasurer, Dr. Marion K. Bowles; member board of censors, Dr. F. W. Ruben; delegate, Dr. Watson H. Curtis; alternate, Dr. D. W. Jump; member medicolegal committee, Dr. Wm. Dougall; member auxiliary legislative committee, Dr. Wm. M. Richards.

Adjourned.

MARION K. BOWLES, Secretary.

TREATMENT OF COMPOUND FRACTURES.

W. W. WILLIAMS, M.D., QUINCY, ILL.

(ABSTRACT.)

The modern aseptic treatment must vary according to the nature of the wound and the manner in which it was inflicted. As a general rule, it may be stated, the first dressing decides the fate of the patient and determines the process of wound healing. The treatment of the wound is of far greater consequence than that of the fracture itself; more especially during the first two weeks. A combination of most thorough aseptic treatment of the wound, with immediate and perfect reduction of the fracture, followed by fixation of the fractured limb by some kind of plastic splint, yields the best results.

Whenever there is any prospect of obtaining primary healing of the wound, the attempt should be most faithfully made. The keynote is cleanliness. If asepsis can be secured, or at least if sepsis can be reduced to the point at which any remaining infection can be dealt with by the tissues, a compound fracture will run the same course as a simple one. It is in these cases, perhaps more than in any other class of wounds, that the indiscriminate use of chemical antiseptics may do harm. If such chemicals avail little when used for the surrounding skin, they can, at least, do no harm, but the case is very different with the deeper tissues. Organisms which are entangled in the tissues cannot be reached and killed by any chemical solution which will not at the same time kill the far more delicate protoplasm of the tissue cells and phagocytes. Such destruction of the tissues produces a material which forms a favorable nidus for the development of the organisms. On the other hand, these tissue cells, if uninjured, are capable of dealing successfully with a certain number of organisms, and they should be given the opportunity of so doing.

Immediate amputation is indicated in severe crushes, with extensive comminution of bone and laceration of soft parts, extensive involvement of neighboring joint, and obliteration of the arterial supply. The age and general condition of the patient are also to be considered. In the young and vigorous an attempt may often be made to save a limb, which in the old, the alcoholic, and the subjects of visceral disease would require primary amputation.

The following treatment is indicated. In the less severe cases in which the wound has been caused by the projection of the bone through the skin. Operation: The patient should be anesthetized as soon as possible after the accident. A preliminary cleansing should first be undertaken, then cover over the actual wound with a piece of gauze, shave a wide area of skin and cleanse with ether,

soap and a nail brush. The wound itself must be well washed with ether, soap and an abundance of hot water. In cases where the bone is projecting through the skin, we may have to enlarge the wound in order to effect its replacement. It is seldom necessary or advisable to remove any portion of it. The bruised and torn skin edge must now be cut away with a scalpel, leaving a fresh, clean margin to the wound, which is next washed with a hot saline solution. Remove any actually separated pieces of bone, and cut away any badly bruised or lacerated pieces of soft tissue. The venous oozing is usually controlled by hot saline solution. If this fails, the wound must be plugged with sterile gauze. Wherever it is possible suture the wound without drainage, but it is often wise to put in the sutures some distance apart so that any exudation can escape between them. A large dressing of sterilized gauze and wool is applied. The splint employed should be of such a kind that the wound can be readily inspected with as little disturbance as possible. If in three or four days the general and local conditions indicate that the fracture is running an aseptic course, some other form of splint may be substituted. But if suppuration occurs, the patient is exposed to the dangers, both local and constitutional, attendant upon infective osteomyelitis. Any degree of acuteness of the infective process may be met with, depending on the nature and virulence of the organisms present and the constitutional condition of the patient.

Three main classes of suppurating compound fractures can be recognized. 1. Those in which the infection is mild, with little constitutional disturbance and slight local signs of inflammation. In these cases it is best to open up the wound, apply hot fomentations for a few days and then, immobilizing the fracture on some splint which allows ready access to the wound, await the separation of the small sequestra that may be expected to result. 2. Those with severe constitutional symptoms in which the infection spreads beneath the periosteum or up the medullary canal, causing widespread cellulitis or infecting a neighboring joint. In such cases free incision with drainage and bath treatment, where practicable, may yet save the limb. But if, in spite of all such measures, the fever continues and the patient is losing ground, amputation must be performed. This operation is rendered imperative if symptoms of pyemia begin to manifest themselves. 3. Cases in which some specific organism has invaded the wound. Such cases require, as a rule, immediate amputation. These are usually emphysematous, gangrene, and tetanus.

FIBROCYSTIC TUMORS IN CHILDREN.

(Case Report.)

L. Brannon, M.D., Joliet.

The rarity of cystic tumors in children and the gravity of the removal of complicated ones, prompts me to mention a case referred to me by the Drs. Allison of Essex, Ill.

Ruth R., aged 9 years, of delicate constitution and impaired nervous system, during the last two years received two hard blows upon the abdomen, one by falling on a plank, and another by being struck with a ball. However, she attended school and appeared to be in fair health until about a month ago, when after eating heartily of grapes, she had obstruction of the bowels.

She arrived, after having ridden thirty miles, at St. Joseph's Hospital at 10 o'clock. She was unaware that an operation was to be performed, until about 1 o'clock. When being so informed, she insisted upon its being made immediately, which was done. After the abdomen was opened, the incisions were lengthened to such an extent that all parts of the abdominal and pelvic cavities could be easily reached, that the work might be done quickly, for the tumor filled the whole space.

The omentum was all adherent and several loops of the intestines and the appendix were deeply imbedded in the tumor. The omentum was cut off and the

bleeding points ligated, and the cyst emptied with a trocar. The intestines were carefully removed from the tumor, as well as the appendix, for its enlarged and lengthened condition gave it the appearance of one. After the tumor was removed and the injured walls of the intestines were repaired with Lembert sutures, the abdomen was rapidly closed, for the shock was severe. When placed in bed she was pulseless and breathing had about ceased.

Salt solution, which had been given subcutaneously, during the latter part of the operation, was now given intravenously.

In addition, artificial respiration was resorted to, adrenalin chlorid, strychnia and nitroglycerin were given hypodermatically. She rallied promptly and made an uneventful recovery. Within a few weeks she reentered school and is now in robust health.

MALARIAL CACHEXIA AND ANEMIA SIMULATING PARENCHYMATOUS NEPHRITIS.

(Case Report.)

B. G. R. Williams, M.D., Paris, Ill.

The case which I am about to describe serves as a very good instance where unusual patience was necessary not only for a rigidly exact diagnosis but for a fairly satisfactory therapeutic result. It shows also what a small thing may put the physician on the right track.

Mrs. S., aged 38 years, American, housewife, called me to her home, Sept. 16, 1909, for "weakened health." She said that for the past three months she had noted a loss of weight, breathlessness, backache, headache and coldness of feet. She stated that at times her eyelids and ankles were a bit puffy. Neither family or sexual histories offered any points of interest. Had had childrens' diseases, typhoid fever and abscess of gall-bladder but could not recall any other previous affection. No bad habits except that she drank strong coffee at every meal. She was unable to name a definite date for the beginning of the present trouble. As to the cause she was inclined to attribute this to overwork and exposure. Onset was very gradual. She first noted the languor, explaining it as an inability to accomplish as much in the same time as hitherto. She had had well days but had steadily grown worse.

She had lost about 20 pounds. She coughed some at times but failed to raise anything. She claimed that several weeks before she had expectorated blood. She had been bothered considerably with palpitation of the heart. Though appetite was poor there was no nausea. She claimed that stools appeared normal though urine was scanty. Complained of pain throughout abdomen and a general "soreness" of bowels, no night sweats; no vertigo. She was troubled with a constant headache, insomnia, coldness of the feet and tinnitus aurium.

Status Præsens.—Temperature 99.1 in evening; pulse, frequently 92, fast, gaseous; radials not sclerotic; respiration 19, not labored. Medium height and build, slender, symmetrical; muscles soft; panniculus thick; bones light; most of lymph glands palpable. Reflexes exaggerated. Patient lies in bed too weak to rise but does not grow dizzy when she attempts to stand. Speech normal.

Skin, pale, waxy, no cyanosis, icterus or eruption; mucous membranes pale, skin cold, some pitting over ankles, no scars except linea albicantes. Head including eyes negative. Neck thyroid somewhat enlarged and firm (no symptoms of hyperthyrea). Thorax, negative except for some crepitant râles over back. Vesicular breathing. Heart, negative. On September 23 a functional murmur was heard. Abdomen, tenderness at all points but more marked at certain points the position of which varied with each examination and were influenced somewhat by suggestion. Spleen not palpated (September 18).

I then turned my attention to the urinary tract. Patient complained of passing small amounts of urine often. She used the urinal often during the night but attributed this to her insomnia. Urinalysis: Proteins and proteoses in large

amounts, microscopic examination showed cells from uriniferous tubules, pus cells, and erythrocytes. Few blood casts but no epithelial nor fatty casts. Specific gravity 1.032 on September 18. Other tests negative. Sputum examination negative.

At this point I initiated a rigid milk diet, administered iron and excluded salt from the food until a marked decrease of chlorids in the urine was noted. Instead of a favorable reaction, however, the patient steadily declined, in one instance sleeping about thirty hours without waking. Routine blood examination showed a marked secondary anemia, which I assumed to be toxic in origin.

On September 26 patient remarked that she had noticed that she felt worse every third or fourth day. I had noted almost simultaneously that she ran a temperature when she had these periods of feeling worse. An examination of the spleen at this time showed a slight enlargement. Patient recalled that about twelve years previously she had had chills and was green but that these had disappeared on taking large doses of quinin.

At this point I began searching for the *plasmodium* but failed to find any trace until I had made many examinations. But in one smear stained with Wright's blood stain I found some small hyalin bodies in some of the erythocytes. Neither was there any pigment nor were there any sexual forms found. The type of the plasmodium could not be determined. Blood examination showed: Flow free; color, light; hemoglobin, 70 per cent.; erythrocytes, 3,841,000; leucocytes, 12,223; coagulation time, four minutes; other special tests negative or not attempted.

Classification of Red Cells.—Present: Normal erythrocytes, microcytes, undersized cells, poikilocytes, shadows, endoglobular degeneration, enlarged and diminished delta. Absent: Oversized cells, macrocytes, normoblasts, microblasts, megaloblasts, poikiloblasts, degenerating normoblasts, karyorrhexis, karyokinesis and polychromophilia.

Differential Count (in percentage).—Large lymphocytes, 18; small lymphocytes, 3; mononuclears, 2; transitional, 1; polymorphonuclear eosinophil, 3; polymorphonuclear neutrophil, 72; polymorphonuclear basophil, 1; mast cells and unclassified, 0; myelocytes, 0; myelocytes eosinophil, 0; micro-organisms, plasmodium malariæ.

A diagnosis of malarial cachexia and anemia was made at once. I administered ten grains of quinin muriate on the evening of September 18 and doubled this dose the next day which was her expected off day. Then I continued with 5 grains of quinin daily and gave her 5 drops of Fowler's solution after each meal for three days. On September 20 there was a marked improvement, and three days later I dismissed the case, receiving favorable reports from time to time for several days. Abdominal tenderness had disappeared, urine was normal. The spleen remained large, seeming to increase in size after the symptoms disappeared. Blood picture improved slightly in three days after quinin was started. No more endoglobular bodies were found. Small doses of quinin, iron and arsenic were given for several days.

It might be noted that although there was most probably a paludal hepatitis at no time was there any bile to be found in the urine. The right hypochondriac region showed an almost continual tenderness and the scleræ were of a greenish cast.

In conclusion I believe the case to be a good illustration of how a very small point may change the diagnosis, prognosis and treatment of a case upon which another disposition had previously been made.

NEWS OF THE STATE

PERSONAL.

Dr. Charles Adams, Chicago, sailed for Europe April 9.

Dr. Frank W. Lynch, Chicago, has returned after four months abroad.

Dr. and Mrs. John A. Koch, Quincy, sailed April 23 for a six months' trip abroad.

Dr. Julius H. Hess, Chicago, accompanied by his family, sailed for Europe April 12.

Dr. Daniel D. Brengle, Winchester, one of the oldest physicians in the state, is critically ill.

Dr. and Mrs. Franklin H. Martin, Chicago, have returned from Egypt and the Orient.

Dr. Paul E. N. Greeley has commenced the erection of a private hospital in Waterman.

Dr. Charles E. Crawford, city health officer of Rockford, has returned from a trip to California.

Dr. Samuel N. Wylie, Paxton, has returned from Palm Beach, Fla., greatly improved in health.

Dr. S. C. Stanton, Chicago, had his sixth attack of diphtheria last month, fortunately a light case.

Dr. John M. Gulick, Manteno, was operated on at Mercy Hospital, Chicago, recently, for appendicitis.

Dr. Edward A. Foley, Kankakee, has been appointed assistant superintendent of the Anna State Hospital.

Dr. Glenn W. Putnam has succeeded Dr. I. W. Howard as surgeon of the Burlington Relief Association, Aurora.

Dr. Jacob Frank and wife, of Chicago, have returned from an extended trip through Egypt, Palestine, Syria and Turkey.

Dr. Isadore S. Trostler, Chicago, was operated on in St. Luke's Hospital, Chicago, April 2, for a fracture of the right patella.

Dr. James A. Cline, Joliet, who recently underwent an operation for appendicitis at St. Joseph Hospital, is reported to be convalescent.

Dr. George P. Powell, Dixon, has been appointed a member of the board of pension examining surgeons, vice Dr. David H. Law, deceased.

Dr. Eugen Cohn, assistant superintendent of the Anna State Hospital, has been appointed assistant superintendent of the Peoria State Hospital.

Dr. Howard T. Ricketts, assistant professor of pathology in the University of Chicago, has resigned to accept the professorship of pathology in the University of Pennsylvania.

Dr. E. Fletcher Ingals, Chicago, has been elected an honorary member of the Vienna Laryngologic Society and corresponding member of the Royal Society of Physicians, Budapest.

Dr. Harry M. Hayes has returned to his home in Peoria after a year's study of surgery in England, Germany and Vienna. Dr. Hayes is located at the New National Hotel and limits his work to surgical practice.

Health Commissioner William A. Evans, Chicago, Dr. William K. Murray and Dr. Egil T. Olson, have been appointed a board to pass on the medical and physical defects of 370 members of the police department who have attained the age of 50 years and have been in the police service twenty years.

Dr. Hugh A. Cuthbertson, 6242 Woodlawn avenue, and his sister, Miss Agnes Cuthbertson, and Dr. James T. Campbell, 34 Washington street, and his mother, all of Chicago, sailed from Boston, April 2, via the Mediterranean route, for Naples, Vienna and London, to be gone three months.

NEWS ITEMS.

—The Illinois State Association for Graduate Nurses is endeavoring to raise $10,000 for the erection of a building to be used for the care of nurses attacked by tuberculosis.

—At the recent local election the municipal tuberculosis sanatorium tax levy was carried in Rock Island. This is the first city outside of Chicago to take advantage of the Glackin sanatorium tuberculosis law.

—How would you like to consign a poetic friend to a "haven full of muses" and have a compositor switch him to a "harem full of nurses?" It is to laugh, but perhaps the friend enjoyed the society better and had no kick coming.

—At a meeting, on March 23, of the hospital commission consisting of representatives of Cook County and Chicago it was decided that the county hospital is to be retained in charge of the county board. No more contagious diseases are to be treated in the institution and the city will build a hospital for contagious diseases.

—Mrs. Helen Morris, wife of Edward Morris, Chicago, has deeded the site of the Chicago Home for Convalescent Women and Children,

valued at $10,000, to that institution. The gift makes possible the addition of a children's ward. The building at present on the site will be remodeled and a new four-story structure will be erected.

—It is reported that Dr. L. C. H. E. Zeigler, Chicago, has been awarded $100,000 by the Supreme Court on his claim against the McVicker estate for medical attendance on the late Mrs. McVicker. The Appellate Court decided against the doctor, holding that the contract was against public policy, as noted in the September JOURNAL.

—At the twentieth annual reunion and dinner of the class of 1890 of Rush Medical College Drs. E. Fletcher Ingals and Arthur D. Bevan delivered addresses; Dr. T. E. Wilcox was elected president; Dr. Henry D. Anderson, vice-president; Dr. Emanuel Friend, secretary, and Dr. Thomas H. Culhane, Rockford, necrologist.

—The board of administration has appointed Dr. Sidney D. Wilgus, of New York, superintendent of the Northern Illinois Insane Hospital at Elgin, effective May 1. Dr. F. H. Jenks has been acting superintendent since the resignation of Dr. Podstata. Dr. Wilgus is chairman of the New York commission in lunacy and during his five years' incumbency 1,200 aliens have been deported from the state hospitals for the insane. The board has also developed plans for returning non-residents to their homes in other states, and at the present time is sending out of the state annually 500 persons who otherwise would be public charges.

—Those of our readers who are interested in the various forms of physiologic therapy (including hydrotherapy, electrotherapy, massage, hyperemia, etc.) will be glad to know that it is proposed shortly to inaugurate a new journal devoted solely to the delineation of the progress made in these lines of therapeutic endeavor. *The American Journal of Physiologic Therapeutics* will be published bi-monthly and the subscription price will be $1.00 a year. The names and addresses of all interested physicians should be sent in, and those desirous of subscribing at once may enclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write *now*, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison street, Chicago.

—The recent adoption by the International Harvester Company and the proposed plan of the United States Steel Corporation for industrial insurance will be noted with peculiar interest by those who read the elaborate articles on workmen's compensation contributed to the JOURNAL last year by Dr. W. H. Allport. The adopted plans will aid the state commission in framing a law for general application. It is estimated that under the plan of insurance *against* damage claims the injured employees have received only 45 per cent. of the sums paid by the employers to the insurance companies. Under the new régime payments will be made promptly and in accordance with a definite arrangement in case of accident or death of an employee. Whether the employee is as fully protected under the voluntary plan of the corporations as public

policy demands is the proper task of the state commission to determine. Those corporations who have taken the step in advance of statutory requirements have shown an admirable, enlightened self interest.

PUBLIC HEALTH.

—A new general hospital for La Salle and Peru was the subject for discussion at a recent meeting of the Twin City Medical Association with the Peru Hospital Association.

—A case of smallpox in Peoria not reported to the health officers is said to have been the origin of several cases, with one death. The local officials reported the circumstances to the state board of health.

—The Chicago Hospital Day Association has decided to set aside one-third of the money collected on Hospital Day, May 16, to the fund for the establishment of a contagious disease hospital, the need for which is urgent.

—Fire caused by lightning partially destroyed the store building of the Bartonville State Hospital early in the morning of April 4. The 150 patients who were asleep on the third floor of the building were removed without casualty by the attendants.

—County Clerk J. T. Zimmerman's (of Shelbyville) birth report for the past quarter shows the total number of births for the first three months of 1910, 184. Males, 98; females, 86; white, 183; colored, 1. Number born in January, 52; in February, 52; in March, 80.

—The board of supervisors of La Salle County has recommended remodeling the present isolation hospital so that the building may be used as a sanatorium for tuberculosis. A large porch is to be constructed around the building and provision made for open-air treatment.

—Dr. Simon Baruch, of New York, attended the opening of the new public bath in Chicago named in his honor, April 21. Dr. Baruch is credited with being the founder of the public bath propaganda in the United States. He is an advocate of the shower bath rather than the tub or pool bath.

—Dr. Henry B. Hemenway in a public lecture said: "Illinois' mortuary statistics are inefficient and inaccurate. They are not accepted by the United States government. Only about 80 per cent. of the deaths are reported. The state authorities are not up to standard and give little aid to the city departments."

—The new Emanuel Mandel West Side Memorial Dispensary, Maxwell and Waller streets, Chicago, was formally dedicated, April 24, by officials of the Jewish Aid Society, the Associated Jewish Charities and the health department. The building is the third to be erected by donations from Mrs. E. Mandel.

—Drs. Walter S. Haines and W. H. Allport, Chicago, have been appointed by Governor Deneen members of the commission to investigate occupational diseases in factories and stores succeeding Drs. Alice Hamilton, who is assigned to expert work with the commission, and Arnold C. Klebs, who resigned to study abroad two years.

—As a result of the annual competitive examination forty interns were accepted for Cook County Hospital, each to serve for eighteen months. Of the successful candidates twenty-four were graduates of Rush Medical College and eight each of Northwestern University Medical School and the College of Physicians and Surgeons.

—At a meeting of the Sangamon County Medical Society, April 11, a milk commission composed of the following Springfield physicians was appointed: Drs. Hugh T. Morrison, Samuel E. Munson, Harry C. Blankmeyer, Emil L. Bernard and George T. Palmer. This commission will go into all the facts concerning the establishment of a system of certified milk for Springfield.

—County Clerk Haas is cooperating with Health Commissioner Evans of Chicago by furnishing daily lists of mothers of babies registered, with the nativity of the mother. The department mails each mother a copy of the circular on "Hot Weather Care of Young Infants" as written by the late Dr. Frank W. Reilly. Eight languages are represented in the circulars and more could be used to advantage.

—A free bed for nurses afflicted with tuberculosis has recently been established at the Edward Sanitarium at Naperville, a department of the Chicago Tuberculosis Institute, in recognition of the valuable service of the nurses of Chicago, who as members of the nurses' auxiliary committee of the institute took a leading part in the sale of Red Cross Christmas stamps. From the proceeds of this sale the money to support the bed has been appropriated.

—The first concerted movements by Chicago organizations to enforce the anti-spitting ordinance was started March 31, at a meeting attended by representatives of the police and health departments, men's and women's clubs, social settlements, united charities and the Chicago Tuberculosis Institute. The Chicago City Railway Company has announced that it will have new posters placed in all its cars warning against spitting and that transfers will have similar matter printed on their backs.

—The Chicago City Railway Company has contributed advertising space in all its cars for the propaganda against spitting and smoking, and also prints advice against spitting on the back of 600,000 transfers issued daily to its patrons. The Tuberculosis Institute, the Visiting Nurse Association and numerous women's clubs are aligned with the health department in the crusade. Public opinion is with the elevated railroad company that abolished smoking in its cars and the others may be compelled to get in line.

—The decision of the Supreme Court upholding the law prohibiting the employment of women in factories, laundries and other mechanical establishments more than ten hours a day is a most enlightened application of medical wisdom. In his argument before the court Mr. L. D. Brandies took a long shot of three pages of law to 600 pages of medical testimony, and won. The court cut some red tape when it announced: "It is known to all men, and of what we know as men we cannot profess to be ignorant as judges."

—Dr. George W. Webster, in a recent public lecture under the auspices of the Chicago Medical Society, on "Alcohol and Good Health," said that "the death rate from alcohol is as great as from tuberculosis, 140,000 a year. Physicians should teach the effects of its use on working efficiency and in regard to health, and in this way they could do more than the moral instruction and arguments of clergymen, temperance workers and reformers. We deserve condemnation as a profession when we sneer at the clergyman and the reformer in their efforts to stamp out this evil."

—The Logan Square Club, Chicago, gave a dance March 29 for the physicians and dentists who are members. The attendants were dressed as internes and nurses. Operations on the patients of a make-believe hospital were announced to begin at 9 p. m. and the ambulance was to call at 1 a. m. Each man was supplied with prescription blanks and was expected to prescribe for any alarming symptoms developed by their fair partners. Real pharmacists then filled the orders at a mimic drug store. For one of the novel figures of the cotillion each dancer had a miniature telephone. Suddenly a telephone rang calling all the doctors to the anteroom. Next the cry of a baby was heard. A moment later the doctors rushed back, each pushing a go-cart containing a miniature stork.

—It is estimated that 10,000,000 persons heard 70,000 sermons on tuberculosis preached April 24, under the auspices of the National Association for the Study and Prevention of Tuberculosis, from the pulpits of the country.

As far as the preachers followed the texts furnished by the Association and local health authorities much good should result from the diffusion of real knowledge of the disease. Many preachers devoted one or more sermons to the propaganda, in some cases providing themselves with charts or stereopticons to illustrate the talks.

In his sermon at the Fifth Avenue Baptist (Rockefeller) Church in New York City, Rev. Dr. Aked told how sunlight and fresh air were the best physicians.

"If I could only teach that," he said, "I should be sure to go down in history as a benefactor of mankind."

Bishop Samuel Fallows in his sermon at St. Paul's Reformed Episcopal Church contended that it was the work of the church to lead in movements such as the one against tuberculosis.

"Christianity to-day cannot be divorced from anything that bears upon the well-being of mankind," he said. "There is nothing pertaining to humanity that is foreign to it. No millennium can ever come until there are sound minds in sound bodies. Christian ministers must be in the forefront with enlightened physicians in the Christ-like effects to stamp out disease. They must see that

their own church structures are not the harboring places by ill ventilation, of health-destroying germs."

—A comparative statement of Chicago's mortality for the first three months of the year as compared with the same months of last year shows an increase of the death rate from 15 to 15.9 per 1,000. The principal increase was in deaths from pneumonia, 420, to a total of 2,046. Tuberculosis increased from 1,057 to 1,105. Typhoid decreased from 95 to 54. Scarlet fever decreased from 117 to 99. As the *Bulletin* of April 2 stated:

About the only cheerful thing in the mortality record of the first quarter of the current year is the very low death rate from typhoid fever, a reduction of 45 per cent. from the record of the corresponding period of last year, which up to this time was the lowest ever recorded in Chicago. Since the first of the year there have been only 54 deaths from this disease as against 95 in the same period of time last year. In January there was a saving of 1, in February a saving of 20 and in March a saving of 20. If we can hold the record for the next 9 months at the same figures that obtained for the last nine months of last year, no further savings will be necessary to give us a yearly rate of 9.9 per 100,000 of population, a rate considerably lower than the lowest ever recorded by any other large American city. Contrast this with the typhoid rate of 173.8 that obtained in this city in 1891 and you can better appreciate the progress that has been made in the last twenty years toward pushing typhoid fever to the vanishing point.

Formerly we had water-epidemics and more lately milk-epidemics of typhoid fever. The Drainage Channel and the intercepting sewer systems have eliminated the water-epidemics; pasteurization has undoubtedly done much in the last fifteen months towards elimination of milk-epidemics.

With the increasing safeguards now being thrown around our water supply and around our milk supply there is good reason to believe that typhoid fever will soon cease to menace the health and life of our citizens.

REMOVALS.

—Dr. William H. Wilder wishes to announce that after Wednesday, April 27th, 1910, he will occupy his new office in Suite 1417 Peoples Gas building, 150 Michigan Avenue, corner Adams Street, Chicago, Illinois.

Dr. B. C. Corbus wishes to announce the removal of his office, on May 1, to room 602 Reliance building, 100 State street, where he will continue to limit his practice to the treatment of diseases of the skin and genito-urinary system, including his Wassermann work. Telephone remains the same, Central 433. Office hours, 9:30 to 4:30.

IN THE HOSPITAL.

Dedicated to the Colonial Hospital, Geneva, Ill.

REV. ERNEST LEE THOMPSON.

And "now I lay me down to sleep,"
A sleep so strange, and queer,
That presently I cannot tell
If I'm somewhere else or here.

A voice above me says, "breathe deep,"
And I at once obey;
Then keep it up, as best I can,
Till I forget the way.

And now beyond all care and pain
On *ether* wings I float;
Just as within the sunbeams there
I've watched each tiny mote.

And now they treat me as they please,
I cannot make protest;
But those to whom I trust my life
Are doing what is best.

And now I'm waking out of sleep;
I open wide my eyes,
And for an instant everything
Fills me with deep surprise.

I see my friends and smile, and speak,
Then back to dreamland go,
Altho' I try with all my might
To talk with those I know.

And now I'm waking up again,
But, oh, I hurt inside;
I'm cut, and pulled, and torn, and sewed,
And gathered up and tied.

And now I lie flat on my back,
I roll my head and roar;
I'm pierced by *every* kind of pain,
A million aches, or more.

And now the pain is almost gone,
And I am robed in white,
Within a sweet and spotless bed
Just resting, day and night.

And now I beg, and beg for food;
I'd eat it, fresh or stale;
For days I've had just this alone—
A glass of Adam's ale.

And now they bring a cup of tea!
And then a bit of toast!
Soon follow spuds, and other things;
At last I get a roast.

And now I feel my strength return
Unto its old degree,
And I again take up the task
Appointed unto me.

But ere I leave this dear retreat
I'll breathe a fervent prayer
Upon the surgeons, nurses, friends,
Who stay for others' care.

Book Notices.

NUTRITION AND DIETETICS. A Manual for Students of Medicine, for Trained Nurses, and for Dietitians in Hospitals and Other Institutions. By Winfield S. Hall, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School; Lecturer on Physiology and Dietetics in Mercy Hospital and Wesley Hospital, Chicago. Price, $2.00 net. D. Appleton & Co., 1910.

Dr. Hall's work is a concise text-book suitable for the general practitioner as well as under-graduates and nurses and covers the whole field of nutrition and dietetics. Professor Brennerman has contributed two valuable chapters on infant feeding in health and disease. It is the result of a long period of teaching and is practical in every regard. We believe that it fills a long-felt want and that it should have a wide circulation.

TEXT-BOOK ON THE PATHOGENIC BACTERIA. Sixth Edition, Revised. For students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Octavo 709 pages, fully illustrated, a number in colors. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $3.50 net.

Professor McFarland explains that his work is a text-book and not an encyclopedia. It contains a rather extensive bibliography but not a complete one. Through it the student is referred to the original writings upon the subjects treated, to writings that have become classic; that embrace complete bibliographies of the subjects treated, or that are useful because of ingenious experiments recorded, and to writings in which the recent advances of the subject are contained. The work has gone through six editions in fourteen years and has been placed in the hands of more than ten thousand readers. It is up-to-date in every regard, bringing out the new theories in regard to syphilis and other of the latest discovered germs of disease.

THE PRACTICE OF GYNECOLOGY. New (fourth) edition, thoroughly revised. A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M.D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Octavo of 1099 pages, with 1058 original line drawings. W. B. Saunders Company, Philadelphia and London, 1909. Cloth, $6.50 net; half morocco, $8.00 net.

Dr. Ashton's fourth edition, dated September, 1909, continues to exemplify the aim set in the first edition that nothing was taken for granted in describing gynecologic diseases. Explicit directions are given as to what should be looked for in every case, so that the progress of the disease may be intelligently and easily followed. Usually the operation necessary for the relief of the disease is preceded by illustrations of the instruments necessary to perform the operation and the various steps are illustrated by drawings and engravings. Additions have been made on the treatment of cystitis and tuberculosis of the genital organs. Several changes have been made in the technique of abdominal and pelvic operations and the length of time the patient should remain in bed shortened. Practical directions have been added to the chapter on constipation, and altogether the book has been made as practical and helpful to the reader as it is possible for such a work to be.

Ophthalmic Surgery. By Charles H. Beard, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary. 674 pages, with 9 plates and 300 other illustrations. Cloth. Price, $5.00. P. Blakiston's Son & Co., Philadelphia, 1910.

The author of this admirable work has evidently accomplished his desire, expressed in the foreword of the book, to make it the pioneer American work devoted exclusively to the surgery of the eye. The book is very comprehensive and it seems that no surgical procedure of sufficient real or supposed merit to ever engage the attention of ophthalmologists has been omitted. Especial attention has been given to detailing those whose usefulness has been firmly established. American methods have, perhaps for the first time, been given the prominence which they deserve. Anatomical lines have been closely followed in the classification of the operations, thus producing an admirably simple and systematic arrangement. The book is impressive as being the practical work of a practical surgeon. This feature is especially noticeable in the enumerating of the accidents which occasionally follow the more serious operations, and for the relief or explanation of which ordinary text-books may be searched in vain. For example, thirty-five accidents following the extraction of cataract are explained and full instruction given for their avoidance and treatment. The author's skill as an artist has added greatly to the clear presentation of the subjects by giving intelligent emphasis to their salient features. The plates on instruments are exquisite. The chapter devoted to instruments and their management is unique and of interest to both tyro and master. To the former for the information it gives of the qualities of the various instruments that experience has taught to be good or bad, and to the latter, from a historical standpoint, in following the development of the various patterns in the hands of the men who have made ophthalmic surgery. The fidelity with which these descriptions are made might constitute a criticism of this chapter. Here as in other parts of the book American products are given equal prominence with those of foreign manufacture. The chapter on Para-Operative Technic is replete with information on those subjects wherein eye surgery differs from general surgery, as in the preparation of the patient, and the supplies, arrangement, and care of operating room, and all that concerns the after-treatment.

In keeping with the interest now manifested in extirpation of the lacrimal sac, this operation is described with especial care, and illustrated with original drawings. Another reply to modern demands is shown in the unusually large amount of space (42 pages) devoted to the removal of foreign bodies, especially steel, from the interior of the eye. The rapidly multiplying use of steel and machinery, with their accompanying eye injuries, has certainly made this an important part of the eye surgeon's work. It is a truly comprehensive book that will be welcomed by those specializing on the eye.

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ORIGINAL ARTICLES

THE MEDICAL PROFESSION—PRESENT CONDITIONS AND FUTURE PROBLEMS.*

JONATHAN L. WIGGINS, M.D.
EAST ST. LOUIS, ILL.

Any violation of a law, or radical departure from a precedent, is unpopular. To see danger and sound an alarm brands one as a pessimist, especially if the danger is not imminent. The world is optimistic. On the field of battle the soldier comforts himself with the thought that the missile is projected at others, so in this battle of life, no matter how great the danger, we trust by fortunate conditions to escape harm. To pose as a prophet, if the prophecy portends unpleasant experiences, is a situation avoided by the diplomat; for at best, prophecy is but an individual opinion, not subject to proof, and must await the fullness of time for its vindication. If the affairs of mankind moved with no greater speed than they did one hundred years ago, we need take but little thought for the morrow. Had our progress in the realignment of social and business conditions kept pace with our scientific progress, the equilibrium would still be maintained. This unbalanced condition which at present exists is due, not to scientific development, but to our lack of recognition and failure to adjust our business affairs to this new order of things. I have thought that we might with profit consider some of these matters.

The necessity or demand for higher medical education began with the dawn of Listerism. Its advocates, few in number and widely separated, were at variance as to the particular departments which required attention. This movement did not at first meet the desired approval of the profession, many of whose members were, like the public, imbued with the idea that "doctors were born and not made." Here and there an institution raised its standard of preliminary requirements and lengthened its course of study, and this advanced position, secured

* Presidential address delivered at the 60th Annual Meeting of the Illinois State Medical Society.

through strife or diplomacy, was maintained. The history of the first struggle is practically the history of each succeeding one, until at the present time but little more is required of our best colleges except the perfection of minor details. Up to this point there is much cause for congratulation; beyond this there is but little change from that which was in vogue fifty to one hundred years ago. Now, as then, the licentiate having complied with all the previous requirements is free from state control or regulation so long as he violates no written law. Fifty years ago principles enunciated by our teachers were supposed to hold good for all time; a text book lost none of its value because of age; medicine was empirical, encompassed with doubts and mysteries. To-day, scientific physicians, fearing no impeachment, boldly declare that medicine in many of its departments is a fixed science. If the advance has been so rapid and radical as to completely revolutionize our knowledge of diseases and their treatment, if we now, without protest, accede to the demand for higher preliminary requirements and a more efficient course of study, are we justified in continuing our policy of freedom from supervision after conferring the right to practice?

The assumption that the momentum acquired during student days is sufficient to carry forward the work of development and investigation during a life's practice, is wofully disappointing. Many of the graduates of our best colleges, presuming upon admittedly exceptional advantages, discontinue all effort toward further progress, effect contempt for medical societies, subscribe for no journal of merit, and being obsessed with their newly found liberties, their freedom from years of restraint, concentrate all effort upon the commercial side of their profession. At the opposite pole we find the other class; men who, graduating years ago under conditions more baneful than the worst to-day, have evolved by a process of accretion, based upon bedside experiences, a more or less efficient code from which there is little departure. They care little or nothing for medical societies, and abjure medical literature of recent date. Personally they are worthy citizens whose characters are above reproach; professionally, they are more or less a menace to the community in which they live.*

Do you doubt the truth of this statement? Is it not true that no matter how ignorant, uneducated or dangerous one professing to practice the healing art may be, he has a following not alone among the ignorant poor, but also among the more ignorant rich, who are willing to affirm that, "what he does not know about medicine is not worth knowing"?

Every community in our state can furnish examples of their inefficiency—women medicated for "change of life," who are suffering from a malignant involvement of the uterus; cases of so-called dyspepsia with their varied prefixes, which proclaim with every paroxysm the existence of gall stones, chronic appendicitis or peptic ulcers; breast tumors ignored or unrecognized until their termination is self-proclaimed; prostatic enlargement with a catheter as the only means of relief; hernias, large and small, recognized and unrecognized, with their incident morbidity and possible mortality, their only hope a truss; bone and joint infec-

tions, easily recognized and easily relieved in their incipiency, all going onward to their logical termination of permanent disability or death.

Knowing as we do, that each day brings forth some new discovery in medicine, either curative or preventive, and realizing that a treatment to which we accorded full indorsement in the year 1909 would be deemed ill advised or reprehensible in the year 1910, why, may we ask, should one be permitted to conduct a business of such vital importance upon the interest of capital accumulated one, two or three decades ago, to which little or nothing has been added? If the state has the power and is justified in fixing a standard of requirement to be complied with before the granting of a license to practice, should there not be some standard by which this right may be continued or revoked? Of the late scientific discoveries some avail themselves immediately; some, after the lapse of months and years; and some, never. Is it just that a diploma from an accredited medical college, and a license to practice from the state should include the first and last of these types in the same category? Should there not be some official differentiation? Should not the law take cognizance of later growth and development? Is it fair that a licentiate, graduating from a school of admittedly low standard, realizing his limitations, striving through daily study, post-graduate courses and original research to overcome obstacles of education and environment, should be held responsible throughout his life for the shortcomings of his alma mater? Reverse the picture; assume the highest qualifications as an original asset, the inspiration and opportunities afforded by our best colleges, an after life of non-progression or retrogression, should the owner thereof be accredited the virtues due his teachers alone?

Our public school teachers after passing a satisfactory examination are given a second grade certificate only, which, though it entitles them to teach, does not assume a finished work. Study must be kept up, teachers' meetings must be attended, progress must be made, and every two years the certificate must be renewed by examination, or the superintendent may, if satisfied as to the applicant's ability, renew it without further examination. Thus the state safeguards the child's intellectual interests. Is its health of less importance than its education? It seems so. Is there not as great a contrast between the well informed and uninformed physician as between teachers of like types? Are we to presume that a physician will continue his education voluntarily and a teacher only under compulsion? I am inclined to the opinion that the higher educational requirements will never bear full fruitage until some method is evolved by which at least a speaking acquaintance with current medical progress is enforced. I believe that every practicing physician should be compelled to pass an examination on this subject, each year, before a competent examining board; that certificates, graded according to standing, should be issued, which certificate should be displayed in the office of the owner. The doctor possessing the highest grade of certificate should be accorded the right to practice in every state in the Union without further examination.

In the consideration of our present unbalanced method relative to the educational problems which confront us, none can take issue. We select our tree with judgment, plant it with care, and without further

consideration expect it to bear fruit. May we not, with profit, give some consideration to our business methods?

During the last few years such a radical change has come into the business life of our nation as to call for a readjustment of our business methods, conditioned by our changed civilization. The isolated tradesman and manufacturer, through centralization, mergers, combinations and trusts, have been practically eliminated. Comparing the business methods of to-day with those in vogue twenty-five or fifty years ago, we are impressed with the complete revolution. To what degree has our profession profited by the example of the commercial world? It is hard to conceive of methods more wasteful and unsatisfactory in the conservation and development of our resources than that which obtains in the medical profession to-day. This is especially noticeable in our towns and small cities. We find, except where the demands of the present day require a more extensive equipment, the doctors of to-day clinging to the customs of their predecessors unto the third and fourth generation—customs, which in other activities have been discarded as obsolete, and replaced with modern methods. For example, in every town with a population of from two to five thousand you will find from five to twenty practicing physicians. Each one feels it necessary to maintain a down-town office in addition to one at his residence. The location of his office is not one of choice but of necessity. It may be over a barber shop, cigar or drug store, or more frequently in some ill-kept office building. The equipment varies according to the need or circumstances of the practitioner. Added to the rent of these offices is the expense of telephones, heat, light and a more or less efficient office help and janitor service. In most of them you will find a reduplication of books, medical journals, instruments, electrical appliances, etc., and in the offices of our later graduates, a microscope nicely protected from dust. Many of their deductions are erroneous simply on account of the multiplicity of duties, which makes the proper accomplishment of any one, an impossibility. Why not? Can we expect the average mind with average opportunities to master a multitude of subjects in a science wherein we find great minds under favorable circumstances unable to master one? What do we hope to gain by our present primitive methods of isolation? Surely the sentimental idea of maintaining one's independence is not sufficient recompense for the benefits which would accrue from a compact union. Our present exclusiveness engenders suspicion and feuds, and leaves each an easy prey to imposition from individuals, corporations and public officials. The average practitioner, if we consider the expense of education, conventional demands required by society, hours on duty, cost of equipment, etc., receives a smaller recompense than any other professional man. Owing to the practical application of sanitary measures and preventive medicine, which we are developing and freely share with the public, many of the diseases from which we derived our largest revenues have practically disappeared. Thus our returns are every year becoming less, while our expense account, owing to the increased cost of living, increased cost of preparation and equipment, is growing larger. Should it not be well for us to obey that familiar command displayed at railroad crossings—Stop! Look! Listen! Suppose that all physicians in our

smaller towns were to unite for their common good, erect one office building, adapted to their needs, equip it with all modern conveniences and appliances, then each one while doing a general practice might apply himself to the task of becoming proficient in some one department. By this means it might be possible to rehabilitate that fast disappearing adjunct to our profession, the pharmacist. A medical library would be more than a name. Monthly statements, with books cared for by efficient office help would be a reality and not a dream. Jealousies, misunderstandings, fee cutting and fee splitting would cease to exist, and the entire profession be elevated to its proper high plane in the eyes of the community.

This idea may seem Utopian, but if not this, some other plan must be arranged, for the question, "What shall we eat and wherewithal shall we be clothed" is a vital one to-day.

In Europe the government looks after the education of physicians. The practitioners have but empty honors except among a few favored ones. All European states have gone into insurance that applies to every condition and class in life. With this is given free medical and surgical service furnished by the state. The doctor who is the keystone of this service receives the lowest possible wage.

England has been forced into this kind of insurance, together with old age pensions. The physicians make the examinations in order to pacify the applicants. These examinations are farmed out to the lowest bidder. The prices paid by the government necessarily fix the rates for services for a vast majority of the physicians not in the employ of the government. I am creditably informed that large numbers of contract physicians in England receive but a penny a visit, while many of the best men make visits for a shilling. "Coming events cast their shadows before." Already the blight is attacking our own country; insurance companies and fraternal societies are farming out their work, the fees ranging from twenty-five to fifty cents a visit. At present our cities are most affected, but it requires no gift of prophecy to see that ere long our entire profession in country and city will be under the dominion of these companies.

Something must be done to attract intellectual men to our ranks. With an initial expense of at least $2,500 in time and preparation, few men will choose a career unless assured of a suitable return. It were well if our medical societies and physicians not now affiliated with these companies give this matter serious attention.

Since the reorganization of our national and state societies their activities have deepened and broadened until whether or not we will it, we are compelled to take notice and act along lines which before that period were thought to lie outside our legitimate zone. Formerly societies were in session only a few days each year. At present, through our representatives in the council and standing committees, the work of the session continues until completed. Political activity, at one time a charge of reproach, is now encouraged inasmuch as it has been demonstrated that organizations occupy the same relative position as do nations or individuals, in that wherein they fail to protect their own interests, to that extent they are unprotected.

The misunderstandings in our state medical matters which have been so prominently called to our attention during the past few months, are but an evidence of this evolution. It is hardly supposed that a society representing nearly six thousand of the state's most intelligent citizens will, in the future, remain as satisfied under a condition of non-recognition by the state's chief executive, as it has in the past. While there is no desire to encroach upon the prerogatives of the Governor, there is a widespread feeling that we should be accorded the courtesy of advising in matters pertaining to medical affairs. There is a pressing necessity for the abridgment of existing difficulties between our council and the state board of health. Their aims and efforts should be co-ordinate, not antagonistic. While the tenure of my address has been somewhat pessimistic, yet in this matter I feel very optimistic. I am firmly convinced that were the officers of the state board made members of the council, advising with them concerning the affairs which all are striving to correct, it would not be long before all differences would be adjusted.

The laws pertaining to the enforcement of the Medical Practice Act in its various ramifications are in many instances insufficient and should be amended, or new laws should be enacted which would be more effectively enforced. In addition, at every session of our legislature there are introduced a number of "scare head" laws which, if enacted, would discredit and discourage scientific progress. Not until their threatened passage does the general profession become aware of the danger; then there is a great beating of tom toms; much excitement in camp; a marshalling of forces, and finally we escape the threatened danger by a close margin.

We believe that our law makers are men of average intelligence. We know that a man of average intelligence knows as much about scientific medicine to-day as did the physicians fifty years ago. We protest that a handful of adventurers numbering but a few hundred should seem to wield almost equal influence with an army of over eight thousand trained, educated doctors, and I am assured that it would not occur were we able to present unbroken ranks.

The duties of the boards of health in our more populous states have increased to such an extent during late years that it is conceded that these bodies can only render service in keeping with present demands, by concentrating their energies in the sanitary and health departments. We should in this state join in the recommendation of the Joint Council on Medical Education and Legislation of the A. M. A., 1910, favoring the appointment of a separate board to pass upon questions of medical education, legislation and licensure.

There is need for trained sanitary officers in our cities and municipalities, men of both practical and theoretical training. Those who now occupy these important positions seem to have been selected more because of the little annoyance which they occasion to city officials and individuals, than for the good which they may accomplish. The health officer's being a physician does not indicate that the duties are understood or that the office is properly administered. There may exist incapacity or what is almost as reprehensible, an insistance upon visionary or imprac-



ALFRED CLEVELAND COTTON M.D.

PRESIDENT ILLINOIS STATE MEDICAL SOCIETY 1910-1911

tical projects which defeat the object hoped for. One of our obligations is the encouragement of the adoption of a curriculum of sanitary science in one of our best colleges, where students could acquire a working basis should they elect to adopt this profession.

In several sections of our state I found physicians volunteering their services in the examination of school children for mental and physical defects. Inquiry discloses the fact that outside of Chicago there exists no comprehensive effort in this matter. I found that in the smaller cities and villages the percentage of those who required medical attention or the correction of some deficiency, was nearly as great as in our larger cities. The burden of educating the public in this matter has fallen upon a few men. They have done much good. Through their efforts in 1902 the state board of health issued a circular letter to the county superintendents of schools, requesting cooperation in testing defects of sight and hearing and describing methods to be pursued. If any good was accomplished I have failed to learn of it. Our inaction in a matter of so great importance is not creditable to our usual position in matters affecting public welfare. These defects are recognized as a penalty of civilization. All European countries have provided means for diagnosis and correction of these ailments. In our country but one state has laws which are mandatory. I would advocate more insistance upon the part of our society in the enactment of laws compelling the physical examinations of all children attending school.

While this address has covered an extensive field, touching varied topics incident to our profession, any one of which contains in itself sufficient material for an address, I cannot forbear in closing to call your attention to the one great defect in our organization, and in presenting it for your consideration, ask you to analyze it in relation to this new era in which we live. When the practice of medicine passed from the honorarium to a fixed fee the first step was taken in the matter of placing the healing art upon a business basis. This one step presumed that the practitioner possessed knowledge in advance of the laity which had a value in alleviating or curing their ailments. Doubtless this innovation, like all radical changes in customs, was considered undignified and unprofessional. So at the present, except among the few who are looking into the future, the suggestion that the time has arrived when we must place our affairs in the hands of paid officers savors too much of trusts and unions to be seriously considered. Yet this feature must not only be considered seriously, but must soon be adopted. The recommendation of my predecessor, Dr. Pettit, that the necessary expenses incurred by the president in his official visits be paid by the society, and the favorable action thereon of the House of Delegates, was a recognition of the fact that more is demanded from your president than you are justified in asking of any physician who is dependent upon his practice for a living. These demands will increase with time, and no matter how energetic or conscientious one may be, you will find that only through a long and intimate experience with affairs will he be able to understand and safeguard your interest. There are many features which recommend the change from our present condition to that of paid officers

with a longer tenure of service, that are worthy of attention. Among these are personal acquaintance with physicians and conditions in various sections of the state, an acquaintance and familiarity with our public men, an opportunity to frequently visit every county or district society, and through personal solicitations increase our membership so as to include all eligible practitioners. We would be able to adopt a state fee bill modified to suit different localities, which is becoming necessary to check the downward trend in fees occasioned by an overcrowded profession. A fee bill, having state endorsement, would receive much greater consideration than one championed by a local society alone. These measures are not proposed for selfish purposes. The necessity for a well paid medical profession does not impress the public as it should, and would, if conditions were as well understood by them as they are by the profession. A capable physician is the most valuable asset of a community. No physician can acquire and maintain proper equipment, either mental or material, who must devote all of his energies to the question of mere existence. Without incentive based on recognition of higher professional equipment and means for its attainment, we shall find conditions will become similar to those now existing in European countries, where only a few of the favored ones, who are needed by the ruling classes or the rich, are accorded honors or recognition. Our efforts should be directed toward maintaining a higher average of professional skill for the average community.

DILATATION OF THE STOMACH AND CHRONIC BENIGN ISCHOCHYMIA.*

MAX EINHORN, M.D.
Professor of Medicine at the New York Post-Graduate Medical School.
NEW YORK.

Dilatation of the stomach, meaning large size, is frequently encountered and presents a malady of secondary importance. It is usually combined with an atonic state of that organ. Such patients are generally helped by regulation of the diet and sometimes also by an abdominal supporter. In contradistinction to this form of dilatation of the stomach, chronic benign ischochymia, no matter whether the stomach is enlarged (as is usually the case) or not, is always a severe ailment which requires the utmost attention. To-night I will rather dwell upon benign ischochymia and will try and discuss a few of the newer points with regard to its differential diagnosis and also treatment.

Chronic benign ischochymia may be due to: 1. Real stenosis of the pylorus: (1) hypertrophy of the pylorus, (2) cicatricial stricture of the pylorus. 2. Spasmodic contraction of the pylorus: (1) idiopathic, (2) reflex spasm caused by ulcers (in the pylorus, stomach or duodenum) or by more remote diseases like gallstones, etc. 3. An actual weakened condition of the muscular apparatus of the stomach.

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* Read (by invitation) before the Chicago Medical Society, March 9, 1910.

The differential diagnosis between a real stricture and spasmodic contraction of the pylorus is not always easy.

In real stricture ischochymia is a constant phenomenon. The rice test meal, given the night previous to the washing of the stomach in the morning, always shows the presence of nearly the entire quantity of rice in the fasting condition. In pylorospasm the ischochymia is variable. The rice test gives sometimes positive and sometimes negative results. There is also as a rule continuous hypersecretion of gastric juice present, especially if the spasm is due to ulcer, within the stomach or its vicinity.

Recently the duodenal bucket has been of great assistance to me for differentiating between a real stricture of the pylorus and a spastic condition of this organ. If the bucket was found to have passed the pylorus, as may be recognized by first feeling a slight resistance in withdrawing the bucket through the duodenum and pylorus, secondly by the contents

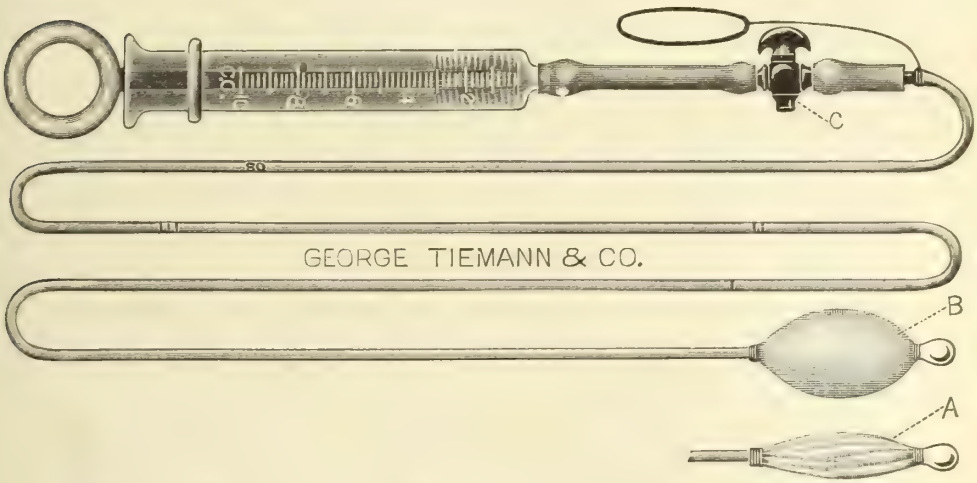


Fig. 1.—Pyloric dilator. A, Rubber bag with gauze envelop in collapsed shape; B, rubber bag with gauze envelop, when inflated with air; C, stopcock.

of the bucket, which, if from duodenum, show a golden yellow or greenish color from admixture of bile and often an alkaline reaction, thirdly by the thread showing a golden yellow color from the bucket upward for about 10 to 15 cm. (the part of thread which was beyond the pylorus) while the rest of the thread remains unstained, then we know that no real stricture exists and must ascribe this condition rather to a spastic form of contraction of the pylorus. If, however, the bucket did not pass the pylorus, then we are not as yet entitled to exclude a spastic condition, unless the experiment has been repeated quite frequently. In case we have to deal with an ulcer, producing pylorospasm, very often the duodenal bucket test will also show the location of the ulcer, particularly if the latter exists in the vicinity of the pylorus along the lesser curvature or in the duodenum. In these instances the thread returns with a blood stain at a certain distance from the bucket corresponding to the site of the ulcer.

Ischochymia due to a weakened state of the muscles of the stomach occurs quite rarely. It is characterized by the ischochymia being of a moderate degree. If a rice test meal is given on the evening previous to the morning lavage it is found that the greater part of the rice has disappeared, while some liquid and also a small quantity of rice particles are still in the stomach. As a rule this form of ischochymia shows rather a steady development and continuous mild degree of suffering without distinct intermissions in contradistinction to the other forms of benign ischochymia which usually present paroxysms of suffering and periods of euphoria in between. The gastric secretion is usually diminished and there is never visible peristaltic restlessness of the stomach present. There are some clinicians who doubt the existence of this form of ischochymia. I, however, believe that such a condition does occur. I have met with it several times.

Treatment.—Liquid diet, rest, gastric lavage, rational medication should always be given a thorough trial for two weeks or more. If the symptoms do not abate and if we have to deal with either a real stricture of the pylorus or pylorospasm due to ulceration, then surgical intervention is indicated. In ischochymia due to a condition of the weakened muscles the medical treatment will have to be carried out for a much longer period of time before resorting to surgical measures.

I recently made an attempt to stretch the pylorus by the introduction of specially constructed instruments (pyloro-dilators) (see Fig. 1). I did it once in a case of congenital stenosis of the pylorus in an infant six weeks old and twice in spasmodic contraction of the pylorus in adults. I may be permitted to briefly describe the history of the case of congenital stenosis of the pylorus in the infant just referred to.

Ezra Paul I., aged seven weeks, was well until two weeks after birth. He then began to vomit after every meal. At the same time he became weaker and was constipated. He weighed ten pounds at first and seven and three-quarter pounds when five weeks old.

Present state: Stomach dilated, greater curvature extending to one finger below the navel. Vomits after every feeding. Two to three hours after nursing the stomach is found to contain a considerable quantity of coagulated milk. The stomach was washed out twice, but the symptoms continued. A diagnosis of congenital stenosis of the pylorus and consequent dilatation of the stomach was made by several clinicians, including myself.

A miniature duodenal bucket was twice introduced and left in the digestive apparatus of the infant for four and six hours, respectively. In withdrawing the bucket it was found that it did not pass the pylorus. I then introduced a tiny piece of a perforated olive-shaped metal (3 mm. diameter and 6 mm. long) on a silk thread and left it in the digestive canal for six hours. In drawing the thread upward a resistance was encountered, which appeared to show that the olive had passed the pylorus and was lodged within the duodenum. Over the thread I then introduced an inflatable catheter which on reaching the duodenum was filled with air, by means of a glass syringe. In withdrawing the dilating

catheter a distinct resistance was encountered at the pylorus, but the same was overcome with the application of some force. Within the stomach no resistance was felt until the cardia was reached. At this point the air was liberated and the instrument easily withdrawn, also the thread with the olive.

The infant began to retain its feedings and to pick up. It gained a half a pound within two weeks. Later, however, the vomiting reappeared. One month after the first stretching of the pylorus the same procedure was repeated with good results.

This mode of treatment will probably find application in specially selected cases, principally of pylorospasm due to gastric ulcer or to remote reflexes.

SUPRAPUBIC PROSTATECTOMY.*

ARTHUR DEAN BEVAN, M.D.
CHICAGO, ILL.

During the last ten years a great deal of careful study has been devoted to the surgery of the prostate, and great advances have been made in that field of work. Advocates of various methods of removing the prostate have fought over the ground in an extremely partisan way. There can be no doubt but that splendid results are being obtained by several methods, both perineal and suprapubic, but the efforts to show that by this or that preferred method the dangers of the operation of prostatectomy have been reduced to little or nothing, are ill-advised. Brilliant results are being obtained, and, considering the age and general condition of the patients upon whom the operation is performed, the mortality is surprisingly low. It is, however, clearly not in the interests of scientific progress or truth to belittle the seriousness of the condition demanding the operation of prostatectomy and the gravity of any radical surgical procedure in the face of such conditions.

As a general surgeon I have watched the development of this work with much interest. I have run the usual gamut of suprapubic and perineal drainage, castration, vasectomy, prostatectomy, partial prostatectomy, perineal prostatectomy with free exposure of the prostate, perineal prostatectomy with midperineal incision and intra-urethral enucleation, and suprapubic prostatectomy. I at one time thought that I had discovered a new operation in what I called the intra-urethral perineal enucleation of the prostate, but a review of the literature soon convinced me that Gouley, Goodfellow, and others had done this years before. I have no new operation to present to you. I should like to attempt, however, to briefly review the present status of the operation of prostatectomy and, if I can, in a non-partisan way present the conclusions which have forced themselves upon me from my own work.

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* Read in a Symposium on Surgery of the Prostate before the Chicago Medical Society, March 16, 1910.

In this discussion I shall consider three operations: suprapubic enucleation, the operation of Fuller, Belfield, and McGill, which has been improved upon and enthusiastically advocated by Freyer, of England. The perineal intra-urethral operation of Gouley, Goodfellow, and others. The perineal removal of the gland through the external capsule and not through the urethra, of Morris and the French surgeons, notably Albarran and Proust, and later popularized in this country, especially by Young.

Excellent results have been obtained by each one of these methods, and each has its enthusiastic advocates. In analyzing the advantages and disadvantages of each method I submit the following:

1. The suprapubic enucleation has the widest field of usefulness. It is practically applicable to all cases of prostatic hypertrophy in which a

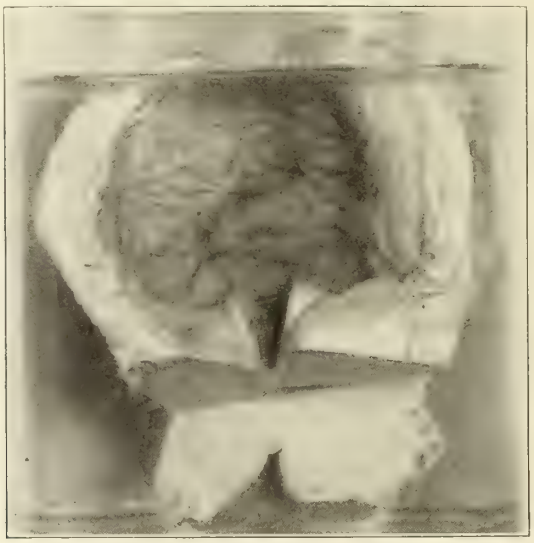


Fig. 1.—Enlarged prostate and bladder

prostatectomy is indicated. It gives full and complete information of not only the prostate, but the bladder and its contents. The operator can inspect bladder and contents before the prostate is in any way interfered with. By this route it is possible to make the operations purely exploratory, or one for drainage if conditions are found making this desirable. It does not injure or interfere with the musculature and nerve supply of the perineum and structures controlling continence. It carries with it little risk of injury to the rectum, it is seldom followed by incontinence, fistula, or stricture. Disadvantages claimed against it are greater mortality and necessity of longer residence in hospital.

Narath, in reporting the prostatectomies done last year, in the Heidelberg clinic, 14 without a death, comes to quite the opposite conclusion, and says that the more severe and more dangerous operation of perineal

prostatectomy has in his clinics been entirely abandoned. I believe that the suprapubic route is gaining ground rapidly in Great Britain and the Continent.

2. The intra-urethral perineal prostatectomy is very much the same procedure as suprapubic prostatectomy. The tumor-like masses are removed after boring through the mucosa of the prostatic urethra by the finger introduced through an external urethrotomy incision. The advantages claimed are low mortality, good drainage and rapid operating. The disadvantages are that the membranous urethra and, to a certain extent, the musculature of the perineum are injured, that one does not obtain a complete knowledge of the bladder and contents, that there is a possibility of injury to the rectum; that incontinence, fistula, and stricture occasionally result; and the advocates of the wide exposure of the prostate by the perineal route claim that it is an operation done in the dark. The advo-

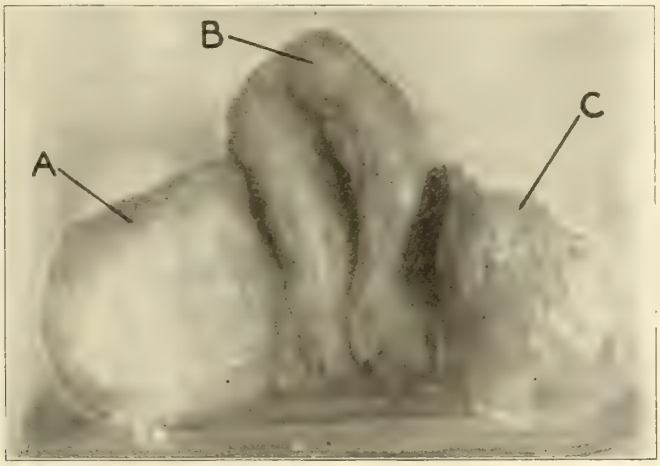


Fig. 2.—Very large prostate removed in one piece, with A, right lobe; B, middle lobe; C, left lobe.

cates of this method offset this statement with the answer that the eye in the educated index finger can be relied upon as much as the eyes in one's head.

3. The perineal prostatectomy, with wide exposure and removal of prostate masses through one or two incisions through the capsule, claim that this side is the conservative method, that by this operation the mortality is less, and, as opposed to the intra-urethral perineal operation, it is an operation done under the guidance of the eye and not a blind procedure.

The disadvantages urged against it are that it is a more formidable dissection, that there is extensive injury to the musculature and nerve supply of the perineum; that incontinence, fistulæ, stricture, and injury of the rectum are more apt to occur after this operation than after the suprapubic.

My own conclusions in regard to these three operations are:

1. That the V- and Y-shaped incision into the perineum, with free exposure of the external capsule of the prostate and dissection of the prostatic masses through incision through this capsule, is an unnecessary traumatism. Seeing the actual operations or photographs taken of the various steps of the operation on the living subject gives one a much better idea of the wide dissection and the extent of the traumatism than is obtained from the more or less diagrammatic plates of the steps of the operation, which are usually shown. An anatomic study of hypertrophied prostates shows that the tumor masses to be removed are much nearer the mucous membrane of the bladder and urethra than to the external surface of the capsule, and, further, that they can be reached much easier and with less injury to blood vessels through the mucosa of bladder and urethra than through an incision in the external capsule.

The term conservative as applied to this operation seems not to be deserved if it is from the standpoint of traumatism. Its only claim could be to the saving of the ejaculatory ducts, and here there is certainly no very good evidence that these are less apt to be injured by this method than a carefully performed intra-urethral or suprapubic prostatectomy.

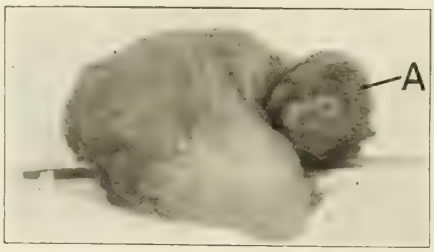


Fig. 3.—Prostate enucleated in one piece. A, Prominent middle lobe.

where the prostatic masses are removed in two or more pieces; that is, where the lateral lobes are removed separately.

2. The intra-urethral method from an anatomic standpoint, except for the fact that the operation must be done by touch instead of sight, the simple, straight perineal incision into the membranous urethra through the central raphé is much to be preferred to the inverted V- or Y-shaped incisions. The incision in the raphé injures to the least possible extent of any perineal incision the musculature, the vessels, and the nerve supply of the perineum. The operation can be done rapidly, the drainage is good. There is less danger of infection and urinary infiltration than in the more extensive dissection.

There are, however, certain objections. One cannot obtain a full knowledge of the bladder and contents, and with massive projections of the prostate in the bladder enucleation may be difficult.

3. That the suprapubic route is the route most generally applicable. The operation can be rapidly performed, the entire bladder and contents at once examined with finger, stones of any size removed, a more accurate differential diagnosis between simple hypertrophy and carcinoma deter-

mined, and any enlargement of the prostate, which legitimately demands removal, removed.

There is no injury done to the musculature or nerve supply of the perineum. There is little danger of injury to the rectum. There is little probability of resulting incontinence, fistula, or stricture. As a whole, the cure is more complete and satisfactory than after a perineal prostatectomy.

The only valid argument which can be brought forward against the operation is the one which is generally urged by the advocates of perineal prostatectomy, i. e., that the suprapubic prostatectomy carries a larger risk than does the perineal operation. If it is true that the advocates of the perineal method have reduced the mortality to *nil,* then this would have to be admitted, but this I do not believe. I agree with the majority of British and Continental surgeons that the suprapubic is less dangerous and a less formidable operation than the extensive perineal dissection. I do not, however, believe that it is any less dangerous than the mid-peri-

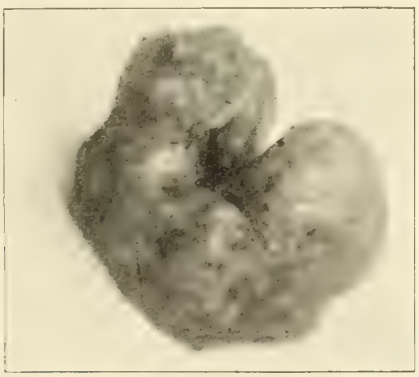


Fig. 4.—Moderate sized prostate removed in a single mass.

neal prostatectomy. I believe, however, that it is more satisfactory on the whole and that it can be made as safe.

In a broad, clinical way, we have in my clinic attempted to divide cases of enlarged prostate into three groups:

1. Simple enlarged prostate without complications.

2. Enlarged prostate with complications, stone, bladder infection, sepsis, etc.

3. Enlarged prostate due to carcinoma.

In the latter class, i. e., carcinoma, I believe that no radical operation should be attempted except in a few rare cases where the carcinoma is so limited that an operation gives fair prospect of cure. Very often the diagnosis of carcinoma of the prostate can be determined by the rectal examination with almost the same certainty that rectal carcinoma can be determined by the experienced finger. Simple hypertrophies seldom give the cartilage or bone-like hardness of carcinoma, and with some study of

cases, comparing the simple hypertrophy with the carcinoma, the finger learns to detect malignant disease.

These cases, with a few exceptions, are best treated with catheter and morphin, occasionally with a suprapubic drainage, and in the rare case by a radical extirpation through the transperitoneal route.

The cases of simple hypertrophy without complications are after a careful analysis of all facts and thorough preparation, submitted at once to radical operation. The patient is placed flat upon the operating table. I can see no advantage in the Trendelenburg position in suprapubic prostatectomy. The bladder is emptied and washed out with hot boric solution and left filled with as much as the patient can comfortably stand. In the straight, uncomplicated case no cystoscopic examination is made.

The patient is anesthetized with nitrous oxid gas or ether. The suprapubic cystotomy is made. The thumb, index, and middle fingers of the left hand are introduced into the rectum and the prostate held up toward the pubis. The index finger of the gloved right hand is introduced into the cystotomy incision. The interior of the bladder is explored. If stones are present they are at once removed. The index finger then bores through the mucosa over the most prominent lateral lobe and the prostatic tumor of that side shelled out; the same is then done on the opposite side, the middle lobe being usually removed with one or the other of the lateral lobes. In cases where the tumor masses cannot be shelled out of the capsule in this way, it is, as a rule, best to remove the prostate *en masse* with the prostatic urethra.

A rubber tube, the size of the index finger, is then placed in the bladder and allowed to project not more than an inch into the bladder, and is sewed in place by a very fine catgut stitch, which passes through first one side of bladder incision through the tube and then through the other side. The laparotomy incision is closed by two or three silkworm-gut stitches. A cigarette drain is introduced into the lower angle of the wound down to the bladder. No gauze packing or irrigation are employed. The abdomen about the incision is covered with stiff oxid of zinc paste, and copious gauze dressing applied. The entire operation can be done, as a rule, in ten minutes and the patient is wide awake as the dressing is applied.

The after-treatment is simple: the cigarette drain is removed at the end of twenty-four hours, and the tube usually in about three days; the stitches at the end of eight days, and the patient is about on a wheel-chair in from three to ten days. The suprapubic wound is, as a rule, closed in twenty days.

In the third class of cases, i. e., hypertrophy of prostate, with complications, infection, sepsis, etc., what should be the treatment? I believe that here, especially when the patient's condition is bad, a two-step procedure under nitrous oxid anesthesia offers many advantages. The first operation being a suprapubic drainage and, of course, a careful exploration of the bladder, with the removal of stones if they are present. This

drainage should be maintained until the infection has subsided and the patient's condition warrants a radical removal of the prostate. The second operation should also be done under nitrous oxid anesthesia; and this can be done, as a rule, without any instruments; simply with the gloved finger. In this second operation no drainage tube is inserted and no irrigation employed. The wound is simply dressed frequently with copious gauze pads, to absorb the urine, and the skin of the lower abdomen protected with zinc paste.

I believe that, following out these general rules of dividing the cases of enlarged prostate into three distinct groups—carcinoma, simple enlargement, and enlarged prostates with complication—and handling them accordingly, i. e., the carcinoma by palliative measures, the simple hypertrophies without complications, with immediate suprapubic prostatectomy under gas, and the hypertrophies with infection and complications by, first, suprapubic drainage, and later, if conditions warrant, by suprapubic prostatectomy, also under gas, the best results can be obtained both from the standpoint of low mortality and completeness of the cure. I believe that, as a rule, the cure is more complete and satisfactory after suprapubic than after perineal prostatectomy.

I feel quite confident that there are fewer complications, such as incontinence, fistula, and stricture, after the suprapubic than after the perineal operation. Will there be any deaths? Yes, certainly. There will be some deaths from lung complications, even though such an innocuous agent as nitrous oxid is employed, and more, of course, if ether or chloroform is used. There will be some deaths from hemorrhage and shock, especially in the cases which were thought to be benign but are found at operation or under the microscope to be malignant. There will be some deaths from kidney insufficiency and suppression of urine. There will be some deaths from infection. There will be an occasional death from apoplexy. What is the mortality rate? My impressions are that in a large series of cases done by competent men it will be somewhere from 5 per cent. to 10 per cent.

In discussing the advisability of an operation with an intelligent patient, I think that it would be fair to give him to understand that he ran somewhere in the neighborhood of from 5 per cent. to 10 per cent. of risk if he had his enlarged prostate removed. I do not think that it would be fair to state to him that, by any method, the operation could be done with trifling risk.

It is not my intention to belittle in any way the various operations of perineal prostatectomy or the excellent work done by the surgeons advocating this route. I present this brief paper rather as an attempt to arrive at an unbiased conclusion after a trial of practically all the methods which have been advocated.

DIAGNOSIS OF PROSTATIC LESIONS.*

Louis E. Schmidt, M.D.
CHICAGO, ILL.

In considering this subject I shall not dwell on the microscopic pathology, but will refer to the diagnosis from a clinical standpoint, chiefly of the macroscopic lesions. It becomes necessary, however, to consider other conditions which are not prostatic in character when the differential diagnosis is considered.

As this subject will be open for discussion, I shall take the liberty of expressing my opinions freely in regard to the mode of procedure of examination, although I know full well that they may not meet with the approval of all. At the outset I wish to state most emphatically that I am of the opinion that if it is justifiable, it is always desirable to examine thoroughly and to have a most definite and accurate idea of the pathologic conditions previous to any operative interference. I do not hesitate to state that the phrase, "if it is justifiable," may be misinterpreted. So as not to be misunderstood I shall cite a few instances to make this perfectly plain.

1. Patient, aged 65 years, had a clear history of prostatic enlargement for the past ten years. In the past six months increasing urinary symptoms. Frequency of urination both day and night. Severe pain with each act, particularly at the end of the act. On examining you note that the patient has lost weight, is extremely weak and has a septic tongue, marked arteriosclerosis, irregular and high tension pulse and a urine loaded with pus, and with more albumin than the corresponding amount of pus. Further, the patient is extremely sensitive to examination. There is a swelling in the suprapubic region extending nearly to the navel, probably corresponding to a distended bladder. Per rectum, the prostate seems to be bilaterally equally enlarged to the size of a lemon. The consistency is softer than normal and palpation causes considerable pain. The vesicles cannot be felt.

2. Patient, aged 70 years, has a history of urinary disturbances for past fifteen years. Has frequently been catheterized, and during the past year with increasing frequency. He has noticed that it has become more difficult, and correspondingly more painful, so that he refuses all methods of examination on account of pain which is severe from ordinary catheterization.

3. Patient, aged 60 years, has a history indicating urinary difficulties for past three years. At present great frequency day and night, accompanied by tenesmus and great pain, which would continue until next act of urination. Terminal pyuria and hematuria of a marked character. Rectal examination: fairly soft, slightly enlarged but exceedingly sensitive prostate.

It would be an easy matter to cite further cases, but I believe that these are sufficient to illustrate the point of view. Naturally, with care and attention, some of the cases may permit of palliative treatment, so that further examination becomes a matter of ease at a future time. Again, palliative operative interference may have to be instituted which may or may not put the patient into a satisfactory condition for later examination.

* Read in a Symposium on Surgery of the Prostate before the Chicago Medical Society, March 16, 1910.

It is almost needless for me to state that a general examination of the patient should always be made, and this as a matter of routine. I prefer to do this directly after the history is taken. Blood pressure, urinary and *x*-ray examination and any other procedures which may be considered necessary are carried out, as a rule, before the local examination is commenced. I need scarcely state that all individuals cannot be treated alike. An accurate diagnosis can be made only in those who permit of detailed examination. There are other cases where I do not insist on minute examination. I have reference to those patients who only seek palliative treatment. Naturally, some of them, sooner or later, are obliged to consider operative treatment, and if it is then possible I undertake it at that time.

It is right at this point, at the commencement of the local examination, that many of us differ as to the character and extent. I wish to state that examinations, when carried out, should be free from pain; neither local nor general anesthesia should be used. There can be no question that examinations while patients are under anesthesia often permit of rough handling and injury which would be avoided without an anesthetic. Naturally, I shall confine myself in taking up this subject to those of that age where one may expect to find hypertrophy of the prostate.

In establishing a diagnosis, for instance, of enlarged prostate, it has been frequently claimed that it is a result of civilization; hence is not so often met with in certain foreign lands. Facts of this kind can also be considered when stone is considered, as certain countries are regarded as favorable for their formation. Again, in considering the etiology still further, more as a matter of statistics, one should elicit the sexual history, previous prostatic infections, the mode of living, etc.

Previous to taking up the question of local examination I wish to review some topics of general interest and to point out conditions and state certain facts with which one must be familiar in order to establish a diagnosis. Simply to be familiar with methods of examination and to carry them out in a routine-like manner is not sufficient to come to definite conclusions.

In taking up this subject, naturally, the hypertrophy of the prostate, the condition which must be differentiated most often from all other prostatic and other lesions which may give rise to symptoms which sooner or later lead to operative treatment, demands considerable attention. Naturally, some explanation as to the macroscopic and microscopic appearance will not be out of place. Permit me to make reference to some of the periods of consideration which this affection has passed through. Mercier, in 1841, published "Researches upon Genito-urinary Diseases, Having Particular Reference to Those Affecting Old Men." Practically at the same time Civiale published "Diseases of the Neck of the Bladder and of the Prostate." Those who are familiar with this phase of the subject know that the views of both were thoroughly discussed and aroused much feeling. Adherents of both became strong advocates for the respective views independently advanced, and from that time

on, it may be stated, considerable attention has been given to the exact diagnosis of prostatic lesions. Home advocated strongly that it was the so-called middle lobe which was the cause of retention of urine, and, with Mercier, argued that local conditions were the chief factors to be taken into consideration. Velpeau studied the microscopic structure, and he was the first to compare the enlarged prostate as being involved with fibromata similar to the fibromata involving the uterus. Thompson classified the hypertrophied prostates from the anatomic-pathologic standpoint. Guyon embellished upon this and also added the clinical description and treatment. It aided Civiale in his theory and advocated that it was a truly general disease, a dystrophic-prostato-vesico-renal affection due to arteriosclerosis.

In bringing this entire subject up for review, I do so with an object in view. It is always well to know what has gone before us and to take it into consideration when discussing a subject which is still unsettled. I do not wish to be misunderstood, but when the question of operation arises the matter of the general condition of the patient arises and in some, at least, the question comes up: 1. Is the condition simply concomitant? 2. Is it just one of the manifestations of a general disturbance? 3. Or is the general condition simply the sequela of a distinctly local disturbance?

The matter cannot be brushed aside and remain unconsidered, although there are many who will state that the question has been settled and obsolete. Yet I do not hesitate to state that, in my personal opinion, there seems to be in some individual cases some unusual relation between the general condition and the prostate.

Undoubtedly the prostatic obstruction plays the principal part, since its removal by operation renders micturition spontaneous and permits the bladder to contract. It has been positively proven that the degenerative lesions of the bladder, first described by Civiale, are not primary, but consecutive to mechanical disturbances or secondary to infections. Besides, in some cases, they are not at all definite. It was then that Mercier had reason to believe that the formation and hypertrophy of the prostate gland is the real and essential cause of retention of urine.

For some years past this subject has entered a histologic period and one of pathologic discussion. There can be no question that the greater amount of work done in the past fifty years leads one to believe more and more that there is no direct relationship of the enlarged gland to any general disease, but just the reverse, that it is positively a primary condition. Some have attempted to show that it is primarily a glandular affection, following known or neglected inflammation of the gland, and evoluting, depending on the kind of the elemental cause, toward the different types, i. e., simple or adenomatous hypertrophy, benign or malignant neoplasm, or, on the other hand, the precise study of the different glandular groups explains the varieties of hypertrophy and the different shapes of the gland.

The weight of the prostate ordinarily reaches from thirty-five to forty-five grams, but may reach to five hundred grams, from the size of a large

chestnut to that of a cocoa-nut. The hypertrophy may be partial, one or both lateral lobes may be involved, or a protrusion from either one or both, or an enlargement apparently arising from an intra-urethral portion, but probably from one lobe may be the only enlargement. It may be only the size of a pea or reach the size of a large pear. Naturally, this lobe, as it usually is called, the median or Home's lobe, is practically always intravesical. The lateral lobes may or may not be for the greater extent or only partially protrude into the bladder, or, again, protrude chiefly toward the rectum. There may or may not be a nodulated condition which can often be felt per rectum, depending upon the character of the pathologic enlargement. These nodules may protrude into the bladder or, again, into the urethra.

The character of the appearance of the internal urethral orifice differs, I might state, in all cases, but as a matter of convenience it can be stated that there are different types. There may be no protrusion of prostate noticeable, yet the internal urethral orifice may be elevated, due to the enlarged prostate, in some instances prostatic tissue completely, or, again, only partly surrounding the orifice. The orifice may be apparently contracted tightly, as in cases of soft but yet large prostates. There may be complete or only partial funnel-shaped opening, or, again, the internal urethral orifice may apparently be a symmetrical enlargement of both lobes. Thus, again, one meets with small or large, pedunculated or sessile middle lobes which may act as valves. Furthermore, bars, collar-shaped, complete and irregular, or horseshoe-shaped and rosette-shaped enlargements may be observed. It is almost needless to state that an infinite variety of combinations of these various types may be met with giving unusual appearances.

It scarcely need be mentioned that with these enlargements of the prostate there is an accompanying alteration of the prostatic urethra. The anteroposterior diameter often increases to seven and eight centimeters, the transverse diameter almost obliterated. The length of the prostatic urethra increased or decreased, depending upon the character of the changes. Naturally, the prostatic urethra may become very tortuous, due to the different types of enlargement or to the nodules which protrude into the urethra, or it may become a receptacle for the collection of urine and may attain a fair size.

In diagnosing prostatic lesions, it must always be considered that other conditions may be present and may entirely or partly cause symptoms which can be mistaken for those of prostatic hypertrophy, and at that, in some instances, prostatic hypertrophy is present. As already stated, the arteriosclerotic theory as the cause of hypertrophy of the prostate has gradually and constantly lost ground. The neoplastic theory, advocated particularly by Albarran, which considers hypertrophy of the prostate as an adenoma, but which can change into an epithelioma or cancer, has many adherents. But it is the theory which considers hypertrophy of the prostate directly due to prostatic inflammation and infection which seems to be advocated most energetically by the largest number of recent investigators.

Statistics of cancer of the prostate are, in my opinion, most unsatisfactory at the present time. That figures differ can readily be explained. I naturally can only consider those cases where most careful microscopic studies of the prostate gland have been undertaken. A diagnosis from a clinical standpoint cannot be regarded as sufficient, and statistics from this point of view must not be regarded seriously. Here practically only those cases where there is involvement outside of the capsule, where glandular enlargement has taken place, and where general symptoms are already present, or, again, in those cases of cancer of the prostate where the growth is still intracapsular, but where there are distinct bone metastases, is the diagnosis of cancer of the prostate made. It is true that it oftentimes may be suspected, but the foregoing cases are the only ones where it can be established clinically. Young has shown that in his own series of cases carcinoma of the prostate occurred about one-fourth as often as hypertrophy. He has given us the results of most careful examinations of prostates removed at times of operation. These figures, naturally, might differ from those gained from necropsies, because the patients operated on all complained of prostatic disturbances. If all prostates are examined which have been gained from the post-mortem table, all kinds of cases are taken, many of whom have never complained of prostatic symptoms. I do not wish to argue as to whether the cancerous growth proceeds slowly or not. If so, as to whether it is due to a poor lymph supply. Again, why the growth spreads rapidly according to other authors, and the bladder wall, vesicles, ureter and rectum and the retroperitoneal mesenteric glands become involved.

From all this it remains for the diagnostician to be informed thoroughly so as to make an early diagnosis if it is at all possible, because I am certain that all of us do not as yet immediately recommend radical procedures as soon as prostatic symptoms arise. But if there are any signs whatsoever which might point to the possibility of cancer, naturally the earlier this could be elicited the earlier could operative interference be conscientiously recommended. I will try to make clear in what way I elicit my information, which is based purely on personal observation, and point out those cases where I advocate immediate operative treatment. Sarcoma, adenosarcoma, lymphosarcoma or myxosarcoma are rare, and I am inclined to believe that this form of malignant disease in the latter years of life has rarely ever been met with.

There are some other prostatic conditions, however, to which I wish to refer. Glands of the prostate are sometimes enormously dilated and, naturally, pseudocystic in character. They contain more or less fluid. These cysts, one or more, may be of such size as to cause truly enormous enlargement of the gland. Yet there may be an absence or atrophy of all the other tissue of the prostate. Finally, in these cavities concretions or the prostatic calculi, or as Robin describes them under the name of sympexions, are found. This is not such an uncommon condition, as I have operated on seven cases where the diagnosis was made in each instance before operation. These concretions are of a dark brown color, rarely attain the size of a hempseed, often only like grains of heavy sand. Each

grain is facetted and the stones are somewhat translucent. They are supposed to be made up of the retention secretion and of epithelial cells.

I wish also to refer to the changes of the utriculus. Apparently it can assume a cyst-like character. The size may be variable. If large, it may push the urethra toward the rectum, or, again, it may become distended so that it may assume a shape and occupy a position in the bladder similar to a median lobe. I have operated on a case where the cyst was fully the size of a hen's egg, and where I had mistaken it cystoscopically for a median lobe.

Neuralgia of the prostatic uretha, or neuralgia *du col,* as the French call it, should be mentioned. This condition may be present in cases of prostatic enlargement or it may be entirely independent of it. The name implies the condition. I might state that it is regarded as a non-inflammatory hyperesthesia of the surface of the posterior urethra.

Finally, I wish to refer to one other condition, contracture of the neck of the bladder, which has considerable clinical relationship to hypertrophy of the prostate and which should always be recognized. I hardly believe that it should be classed as a variety of prostatic hypertrophy, because the prostate may show no pathologic changes. Civiale, as already quoted, discussed this subject as contracture *du col.* It should be regarded as a distinct condition and more clinical attention should be given to it. In the majority of cases it is undoubtedly due to protracted inflammation extending from the posterior urethra. This condition should not be mistaken for those cases where the prostate is small and hard and which are termed sclerotic prostates. These prostates have been considered as the terminal products of inflammations of the prostate. In connection with these undoubtedly there is an accompanying contracture of the internal urethral orifice, but probably of a different pathologic type.

Recently Casper has cited a case apparently of contracture of the internal urethral orifice, which was accompanied by atrophic skin disturbances, similar pathologic processes only involving different organs.

There is one other condition which must always be considered in the differential diagnosis. The symptomatology is similar to prostatic hypertrophy and contracture of the neck of the bladder. I have reference to seminal vesiculitis. There can be no question whatsoever that diseases of the seminal vesicles play a greater rôle than was formerly believed. Inflammations of the vesicles are common both in the young and the old, just as contracture of the neck of the bladder. Vesiculitis may coexist with enlarged prostate and may or may not be the entire cause of the urinary symptoms. Belfield has described a case where vesiculitis has simulated the symptoms of enlarged prostate. Acute retention of urine may be caused by this condition, as in this case. Belfield carried out a vasostomy and relieved the patient of his retention and other urinary symptoms. I believe this illustrates the necessity of excluding this condition whenever operating for enlarged prostate. In Belfield's case, which was one in a man along in years, there was at the same time enlarged prostate, one, however, which was not the cause of the urinary symptoms.

Now, I wish to reiterate, to make a careful examination free from pain and injury and to come to an exact diagnosis, whether the patient later does or does not submit to an operation, should be the aim of every one who comes in contact with cases of this character. Before proceeding I wish to state emphatically that it is desirable to consider the general state of health; not to find it out at a later period. It must be considered when giving a prognosis. The vascular system in particular should be regarded with great care, as most of these cases occur in those who are well advanced in years. In addition to the physical examination, blood pressure should always be taken. Crile advises, whether malignancy is present or not, to study the hemolytic action of the blood. Some general and nervous diseases are productive of urinary symptoms, and it is well to consider what part they take in the individual cases, for these conditions may be concomitant with prostatic diseases. I need only mention chronic interstitial nephritis, diabetes mellitus and locomotor ataxia. I might add, if they are the cause of the greater and more important urinary symptoms, even if some prostatic condition is present and the cause of some of the urinary symptoms, operative interference would not only be unnecessary but absolutely contraindicated.

In order to be in a position to diagnosticate correctly, it is just as necessary to be familiar with the symptomatology of the individual conditions mentioned as with the pathologic conditions already described. To go into the symptomatology would necessitate too much time, and I will, therefore, confine myself to the topic. Then, finally, one should be in a position to use the various methods of examination and instruments and to make the necessary deductions in order to come to definite conclusions.

I believe in eliciting as much information by simple examination, non-instrumental, as is possible. Permit me to outline the routine method of examination which I usually carry out in those cases which demand it from my point of view. It is scarcely necessary for me to add that this routine method can neither be applied nor is it absolutely necessary in all instances.

The patient is placed on his back and careful inspection made and then palpation of the kidneys and ureters is carried out. If necessary percussion is added. The patient oftentimes is made to assume the classic positions which permit or aid in eliciting information regarding these organs. These various positions are often only a matter of preference, yet sometimes one position offers advantages over others. For this reason it is often best to put a patient through the various attitudes when examining him. This also holds true when examining the patient per rectum. I will not take the time to describe these various positions and the advantages and disadvantages of each.

With the patient again in the prone position, the bladder region is carefully inspected and then palpated and percussed. The distended bladder may often be outlined, showing a symmetrical and smooth enlargement extending from the pubes to the navel or below or even to a much higher point. In cases of diverticula of the bladder one or more notches are readily noted, causing a more or less marked deviation of the

general contour. It is well worth eliciting, in some instances, the presence or absence of pain. In chronic distention with atony or paralysis of the bladder, pain may be entirely absent. Or in the acutely dilated bladder it may enlighten us as to the presence or absence of pericystitis or other inflammatory conditions.

The external genitalia, as a rule, do not give much information. However, edema of the glans and prepuce often indicate prostatic inflammation, particularly if a urethritis due to catheterization is excluded. Again, chronic or acute epididymitis must cause one to consider the presence of seminal vesiculitis. Edema of the scrotum often indicates inflammatory conditions in and around the prostate.

Before proceeding with the rectal examination, a thorough inspection of the anal region should be made in order to note the absence of fissures, fistulæ and hemorrhoids. I am inclined to believe that the rectal examination can give a great deal of information, particularly to those who have given some time and thought to this subject. It is needless to state that rectal examination should be made both when the bladder is full and empty, for the findings may be entirely different. Again, bimanual examination should always be undertaken immediately following. When the bladder is distended the outline of the bladder can be elicited, but following catheterization and emptying of the bladder, if a hard, nonresistant, rounded or even unequal mass can be felt, a median lobe enlargement or tumor of the bladder may be suspected. Besides, and in my opinion never to be omitted and all important, rectal examination should always be undertaken with an instrument in the bladder, either a cystoscope or modified stone searcher.

In true hypertrophy of the prostate, if the lateral lobes are not particularly involved, the prostate may not be bulging toward the rectum at all. If moderately enlarged, the lobes may vary in size and be unequal and even nodulated. Undoubtedly the consistency plays a great factor in determining the character of the pathologic condition. The vast majority, in my opinion, based on many examinations, shows the prostate in true hypertrophy to be fairly firm in fully two-fifths of the cases and in two-fifths fairly soft. The other fifth is practically between these consistencies. It is rarely, or at least I have never met with any cases in which one could state that the prostate is doughy. On the other hand, hard or extreme hardness is almost equally unusual in hypertrophy of the prostate. The surface of the prostate which can be felt per rectum is usually fairly smooth, round but not nodulated. In cancer of the prostate the finding is certainly different. In a general way I am inclined to believe that in fully four-fifths of all cases the consistency is hard, rarely if ever soft, rather varying to the other extreme of stony hardness. This stony condition has not been unusual. I am inclined to believe that all cases do not reach this firmness, yet whenever it borders on this I always seriously consider that the cancer is fairly well advanced. The surface which can be felt per rectum does not always show the same hardness throughout. If it is hard and nodular in places, I place equal importance in the finding. Rectal examination is far more painful in prostatic

hypertrophy than in those cases that I consider carcinomatous. In these the prostate is rarely ever sensitive to touch. The seminal vesicles, if they assume the same consistency as the mass which is considered as the prostate, and particularly if non-sensitive, are often infiltrated with carcinomatous tissue. While in cases of seminal vesiculitis one most often can feel the atonic vesicles which are more or less sensitive to the touch. However, chronically inflamed and thickened walls may give rise to considerable hardness, yet usually more or less painful to the touch.

All these rectal findings remain practically the same whether the bladder is or is not distended. I am under the impression that when the bladder is full a certain amount of firmness is given to the prostate. Yet some points are more readily noted when the bladder is full, and, again, in a general way, less pain can be elicited when the bladder is empty.

In all the cases of stone in the prostate I have been in a position to note a crackly sensation which is imparted to the finger, or it might rightly be called a crepitus. These grains, and some reach the size of a very small pea, come in contact with numerous surfaces of other stones and the whole confined within a sac permit of this peculiar and characteristic sensation. These pseudocysts often become infected, and naturally, with the presence of these foreign bodies, marked urinary symptoms may arise.

In dealing with a cyst of the utriculus, the enlargement is always situated more or less in the median line, taking the course of the urethra. If sufficiently large, fluctuation is to be expected. There are certain conditions which can only be elicited by the rectal examination, however, with a metal instrument, either cystoscope or stone searcher, introduced into the bladder per urethram. I believe that a more general and accurate idea as to what has already been described can be thus gained, but also the infiltration of the urethra can be discovered, which Young first described in connection with cancer of the prostate. I have taken particular note of this condition and I am inclined to believe that whenever a distinctly hard to stony prostate is met with and a similar infiltration of the urethra just at the neck of the bladder, and even along the entire course of the urethra, it adds weight in establishing the clinical diagnosis of cancer. However, in establishing the diagnosis of contracture of the neck of the bladder and sclerotic prostate the procedure is invaluable, particularly to those who do not use the cystoscope. Without an instrument in the bladder, the rectal finding might cause one to believe that there is considerable prostatic tissue; however, with the instrument in place, it is possible to note the inaccuracy and practically the complete absence of prostatic tissue in this manner.

I now wish to refer to the use of the cystoscope in connection with the diagnosis of prostatic lesions. There are many who do not care to acquaint themselves with the technical points involved in the use of the instrument from this point of view. I have particular reference to those who constantly claim they have seen injurious results from its use. I cannot deny this fact, but I claim that the instrument is one of precision and that its correct application and its judicious use and correct

interpretation cannot result in harm to the patient, but to direct advantage in permitting an accurate and early diagnosis.

I can recall cases where if it had been used, unnecessary operations would have been avoided. Hematuria from a kidney, or from atheromatosis, as Kolischer and Kraus have recently shown, encysted calculi in pouches or diverticulæ, the presence of tumors of the bladder, or varicosities and other conditions can readily be noted, which give us at once an insight as to the proper procedure; in other words, as to whether or not operations should be undertaken or whether to operate from above or below.

What information can the cystoscope give regarding prostatic lesions? The exact character, size, contour of the lateral and median lobes of the prostate, the appearance of the internal urethral orifice, the distance from the ureteral orifices, the elevation of the trigone and other points of interest. I do not wish to go into an unnecessary description of the various cystoscopic appearances of lateral and median lobes, rosette, horseshoe, collar and bar formation. Yet I am inclined to believe that some information can be gained as to cancer. Median lobes, whether small or large, lateral lobes or rosette-shaped lobes, do not, as a rule, in my opinion, indicate cancer. However, in those cases where there are bars or even horseshoe and collar, or even complete absence of any distinct intravesical finding of the prostate would indicate considering cancer, particularly if rectal findings would correspond as before mentioned. I have found in not a few cases of these irregular and apparently infiltrated orifices a deposit of phosphatic salts, and in every instance I noted that it accompanied prostatic cancer. In several instances it is true that markedly large lobes, adenomatous in character, were noted, but also found to be cancerous.

The measurement of the length of the posterior urethra is not considered as valuable as formerly. Now it is known that there can be hypertrophy present without an increase in length of the posterior or prostatic urethra. Besides, it does not give information of any practical value. However, there can be no objection to measuring the same. It is carried out with a Mercier or soft rubber catheter. Introduce a catheter into a partly distended bladder, withdraw same until fluid no longer flows out, measure from tip of glans to tip of catheter. Now attach catheter to a syringe and inject while withdrawing. As soon as fluid appears alongside of catheter hold same in place and take same measurements, and the difference between the two shows length of the posterior urethra. Not quite so accurately, but for all practical purposes, the same information can be gained with a bougie, a boule, measuring from internal urethral orifice to junction of bulbous and membranous urethra, recognizing these landmarks. Mensuration of the intravesical lobes and the extent to which they protrude into the bladder can also be readily carried out with an ordinary stone searcher or with instruments specially designed for the purpose in a somewhat similar manner.

Occasionally it is desirable to examine the posterior urethra, and this can easily be done with the Belfield or Swinburne instruments. The

Goldschmidt instrument, which is a water-dilating instrument and can be used for examination and instrumentation of the anterior and posterior urethra, is a unique instrument. I have had occasion to use it in the past few years and I can recommend it, as no other instrument gives the same information regarding the posterior urethra as well as the internal urethral orifice. The retrograde cystoscope only gives the image of the internal urethral orifice from the bladder side, while the Goldschmidt from the urethral side.

800 Schiller Building.

EMPLOYERS' LIABILITY INSURANCE.

W. H. Allport, M.D.
Member Illinois Occupational Diseases Commission.
CHICAGO.

The American employer of factory labor, especially when doing a small and purely local business subject to the laws of only one state, rarely undertakes, under present-day conditions, to deal with his disabled workmen by any method other than the vicarious one initiated through charging off a certain small percentage of his gross income to an insurance fund designed to underwrite him against the risks of Employers' Liability. In the present article, we will discuss the various aspects—commercial and economic, legal and ethical—of this method of meeting the problem of the injured employee.

I. HISTORICAL.

Employers' liability insurance in its perfected form is of English origin, and is a product of the industrial conditions which resulted in the passage of the (Gladstone) Employers' Liability Act of 1880. Although the appearance of liability insurance was nearly coincident with the Employers' Liability Act, we can hardly say that the shortcomings of this Act—which were due altogether to basing the compensation upon *negligence*—actually brought this form of employers' protection into existence. Even before the passage of the English act the responsibility imposed upon the German employer by the Imperial Industrial Code of 1873, had led in Germany to certain crude forms of private *liability* insurance, the necessity for which has now been almost extinguished throughout continental Europe by compulsory *disability* insurance in state or private bureaus.

But back of Liability and Compensation Acts, this delegated protection appears as an outgrowth of those modern machine-bred conditions to which all European laws owe their origin. Both liability insurance and liability Acts exist in consequence of the growing and menacing public sense of the moral responsibility of employers for the injury to life and limb incidental to the conduct of machine-driven industry. English and German employers, keen to note these growing changes in public

sentiment, commenced to insure themselves against liability in the early 60's, even before the passage of Employers' Liability Acts was seriously discussed.

Under present European laws, employers' liability insurance is becoming—especially on the continent—a thing of the past, and has given way to legally prescribed systems in which there is a fixed compensation, based altogether on disability, irrespective of responsibility for the injury.

By no means, however, has this done away with the insurance companies; on the contrary, it has often placed them on a more substantial footing, and in certain countries has increased their business by making insurance obligatory.

In some countries, the state, through insurance bureaus, has entered the field as an active competitor for the business; and in others, the state has assumed the right to take over all this class of business as a government monopoly. In Great Britain insurance is not obligatory, and the employer may insure himself in a stock company, in a mutual company, through a private mutual arrangement with his employees, or not at all. In France, Belgium, Holland and Sweden the insurance is either obligatory, or the solvency of the employer is protected—insofar as these claims are concerned—from a fund provided by taxing him; the state competes, more or less, with the private companies.

In Germany and Norway the state controls all of this insurance, and writes it at a figure which would make the managers of American companies turn pale; this is especially true of Norwegian insurance. An effort is now being made to bring Great Britain into line with Norway and Germany: (1) by making insurance obligatory, and (2) altogether with the state; the latter object will probably never be attained in England.

Industrial America finds itself to-day in the midst of a situation similar to that which, in Europe during the 70's and 80's, preceded the enactment of Employers' Liability and Workmen's Compensation Acts. In America, as was the case in England a generation ago, the tide of public opinion has commenced to attract the attention even of the sitters on the Bench, and—well in advance of statutory legislation—to soak into a few common-law decisions. Even our state courts—often presided over by worthy gentlemen who are apt to take periodical observations of the public pulse just prior to judicial elections—are commencing to feel a sort of common-law inkling that there is such a thing as employers' liability. Our own industrial and insurance worlds, like those of Europe, have been quick to apprehend this change in the judicial front, and although but one Employers' Liability Act—and that a Federal one, reaching only the media of interstate commerce—has been passed in this country, the fact that industry is reefing in for a storm is shown by the $22,000,000 paid by American manufacturers in premiums for liability protection in 1908 alone.[1]

1. Much of the statistical information contained in this article is taken or calculated from the "Spectators' Handy Chart of Insurance" for 1909, and has been verified by an examination of State Insurance Reports.

II. FINANCIAL.

Probably 90 per cent. of American employers of factory labor who have not introduced some form of mutual insurance into their plants, underwrite their liability toward injured workmen in an insurance company.

To write this insurance there are in the United States about fifty American, and five foreign corporations. These companies take on all kinds of miscellaneous business, the premiums from which amounted in 1908 to about $60,000,000. Of these premiums, about two-fifths was paid for protection against employers' liability—$22,440,000 representing payrolls of over $1,800,000,000—and of this amount over $19,000,000 was written by ten corporations, three of them foreign. Of the premiums, between 35 and 60 per cent. was paid out for "management"—taxes, inspection, generous salaries, enormous commissions to agents, and unstinted expense in the maintenance of home and local offices.

During 1908, from 30 to 50 per cent. of the premiums paid to the companies for employers' liability insurance was paid out again by them on account of losses and settlement expenses. About four-fifths of this, or 24 to 40 per cent. of the original premium, is paid in actual liquidation of claims, the remaining one-fifth is the cost of settlement. We must not forget, however, that it often costs the injured workmen from 25 to 50 per cent. of this amount to collect it, so that *a liberal estimate would give to American labor, on account of trade injuries, not more than 25 per cent. of the gross premium paid out by capital to cover this item.*

There is apparently no public means of ascertaining the percentage of profit on any separate line of miscellaneous underwriting, but in view of the fact, noted above, that two-fifths of the increasing miscellaneous business written in the United States is against employers' liability, it is reasonable to suppose that this item furnishes its normal quota of profit toward the aggregate dividends.

It is contended, nevertheless, by honest and intelligent representatives of the companies that were the profits from underwriting alone to receive separate consideration, the dividends would seldom rise above 4 per cent., and for many companies would not only be entirely wiped out but would be replaced by a deficit. In this contention there is probably a large measure of special truth, yet it hardly alters the basic fact that through the system the companies have, on an insignificant capital, not only been able to accumulate monumental surpluses, invested in extremely profitable dividend-paying securities which will never be returned to the policyholders, but they are thus enabled to pay dividends requiring periodical stock watering to keep them within reasonable bounds.

The dividends of the larger American companies taking on lines of liability insurance range from 10 per cent. to 60 per cent., and over, on the actual cash invested in the stock of the companies.

Foreign corporations do not furnish us reports of their dividends, but the agency of one assurance corporation, which has a capital on deposit in the United States of $250,000, remitted in 1906 $259,181, and in 1908

$442,608, to its home office. Another corporation which has on deposit in the United States $300,000 as local capital, remitted in 1906 $115,090, and in 1908 $124,738, to the home office. Still another corporation, which has $250,000 capital on deposit in the United States, remitted in 1908 $73,000 to the home office; in another year, 1905, the same company remitted $183,000.[2]

The *full force of these very large dividends and remittances* is best apprehended, when we add to them the extravagant commissions paid annually to solicitors, and the more than generous salaries paid to general officers and legal advisors, who are usually also the chief stockholders: and then compare this aggregate of self-allotted compensation with the pitiful return which slowly and reluctantly trickles back to the injured worker. It must not be forgotten that, in addition to profits from the actual underwriting, state laws oblige the companies to maintain reserves to protect policyholders, and to cover settlement and suit losses; the companies receive a handsome income from these invested funds. Finally, the amount of business of most of the companies is increasing rapidly, which is added evidence that it is alluringly profitable.

The *rates paid* by *assured employers* for liability protection are variable, and complicated almost past the comprehension of even the insurance agent. To begin with, the larger insurance companies some years ago organized a conference which established and agreed on rates to be charged various industries. These rates—sacredly agreed upon and never used—are supposed to be a profound secret. The chief value of "conference rates" to each company, at the present time, seems to be to furnish a standard for competitors, below which it is reasonably certain each agent will have to cut the premium in order to get the business away from the other fellow. In point of fact, where competition is sharp, where a company is starting and wishes to write much business in short time, where a company is losing business, or where the risk is for some reason very desirable, the company makes its own rates, and makes them far below the conference rate or any other safe standard. Risks which other companies have cancelled as too hazardous have no difficulty in at once placing their insurance elsewhere at the same rates. Furthermore, the conference rate is subject to variation in each state, by an addition or deduction planned to meet the severity or leniency of the local courts and laws on questions of employers' liability. The rates are still farther varied, by allowing employers to dishonestly underestimate the basis of all employers' liability insurance—the payroll. Finally, rates are constantly and honestly varied to meet certain favorable or unfavorable conditions of the individual plant to be insured. It takes no abnormally clever business sense to reach a conviction that such recklessness in the taking on of dangerous risks, in slashing rates, in failure to maintain inspection of plants and payrolls, in ignoring breaches of warranty, would certainly bankrupt any insurance company were not the business unreasonably profitable.

2. Ohio Insurance Report, 1907, p. 914.

The writer is not disposed to juggle with figures, but the temptation is strong to calculate roughly the added cost, in money alone, to the industrial world, and especially to the workman, of allowing employers' liability insurance to remain in private hands and unregulated by special laws. If, as insurance statistics show, $22,000,000 is paid annually in premiums, and if of this sum only 30 to 40 per cent. is paid out again for actual losses to injured workmen, the latter receive nominally 6 to 8 million dollars. But of this sum a conservative estimate will show that he must pay out not less than 30 per cent. for his own cost of collection; so that, of the 22 millions contributed annually by the employer for insurance, the employee actually receives no more than 5 millions, and 17 millions melts away amongst the various go-betweens through whose hands the money passes on its roundabout journey from master to man.

We may advantageously compare these figures with those taken for ten years from a single German industry (Bergische Stahl-Industrie) by an authoritative writer in the *Quarterly Journal of Economics* for November, 1909. To the funds for sickness, injuries, and pensions the employer made a total annual contribution equivalent to an addition of 3.11 per cent. to the pay-roll; at the same time, 2.16 per cent. was deducted from the pay-roll as the employee's contribution; total contributions of 5.27 per cent. of the pay-roll to all three funds from all sources. Economy of administration and absence of litigation have reduced the expense of redistributing these funds to not more than 10 per cent.,[3] so that of the annual insurance charge of 86 marks against the average annual wage of 1,633 marks, more than 77 marks was handed back to the workman with the friendly compliments of his employer.

Although these German figures are probably representative for the comparatively hazardous steel industry, where the accident coefficient is high, they should not be taken as in any way representative of an average for all German industries. The total percentage here given is produced by adding together the percentages of deduction for all forms of insurance—(1) accident, (2) sickness, and (3) invalidity and old age. Whilst the coefficients for 2 and 3 are nearly everywhere stable, that for 1 varies with the hazard of the industry. For less hazardous industries the total deduction for 1, 2 and 3 would not be more than 4 per cent.

III. LEGAL.

The foregoing brief statistical consideration of the commercial and economic aspects of employers' liability insurance has been placed before the reader in order, if necessary, to convince him of the important and intimate relation which this enormous and constantly growing appendage bears to the industrial life of every state in the Union. We are now justified in enquiring *what notice does the law take of the administration of these annual contributions* to an emergency fund intended to relieve the necessities of those injured through trade accidents—contributions aggregating such a generous trust sum, yet which are turned over absolutely for redistribution to the insurance companies as the private and unhampered judgment of their officers may deem best?

The law takes cognizance of operations of this kind in two ways:

1. Certain features of the business are regulated definitely and clearly *by statute,* so that those entering upon it may know beforehand exactly what is, and what is not legal.

3. Vanderlip: The German official year-book gives 6 per cent. It is only fair to say that other writers are skeptical as to the lowness of both these figures.

2. For the control of certain other features there is no statutory course laid down, and the interested parties are brought only semi-occasionally into contact with judge-made law as it is dispensed from the bench to meet the requirements of concrete cases. On this treacherous sea of *common-law jurisprudence*, litigants must either pick their uncertain way from one old decision or analogy to another, or must halt and hesitate as the common law with sluggish footsteps follows in its decisions the intricate progress of modern industry.

3. But note an omission, and most important of all, for here lie the dividends:—The law takes cognizance of nothing which is not the subject of a statute or of a decision, or which is not brought formally to its notice for judicial action. "Whatever the law sees not, is not," and on this nocturnal and unwholesome basis are conducted, with the unvoiced subjects of the insurance contracts, a majority of those transactions whose reason and aggregate result first come to light in the annual dividends or remittances to which we have just called attention.

1. *American statutory law* does not recognize that employers' liability insurance presents any elements of difference which should separate it legally from any other line of casualty or other insurance, nor does there exist any statute in any state specifying the manner in which a settlement with an injured workman shall be conducted, or the basis on which he shall be compensated for his loss. In many states employers' liability insurance is included under accident insurance, and one deposit with the state insurance authorities covers both accident and liability business. In some states, however, this variety of business is recognized as a class by itself in so far as to require a separate and larger capital (Illinois $200,000), invested in good securities, one-half of which must be deposited with and assigned in trust to the state insurance superintendent.

Should any state choose—although such heretofore has never been the case—to enact laws regulating the details of settlements through insurance companies in employers' liability cases, we have the authority of the United States Supreme Court that *a state is well within its constitutional privileges in specifying under what conditions*—even though they may be harsh and arbitrary—*an insurance corporation can do business within its bounds. The state is entitled to revoke a license if such conditions are not complied with.*[4]

The insurance statutes in some states specify that companies shall be entitled, under proper regulations, to take on risks "which may lawfully be the subject of insurance;" and this is the only cognizance which statutory law, up to the present time, takes, either of this undoubted right of the state to regulate details of settlements through insurance companies, or of the important relation which public policy bears to the general subject of liability insurance. *No state has yet taken advantage of these rights to define lawful and unlawful risks, or to regulate settlements.*

2. Common-law aspects of Employers' Liability Insurance.

In the spirit of the loose, and apparently casual, statutory clause just referred to, suits have been brought from time to time to test the general

4. Morse vs. Home Ins. Co., 30 Wis., 496; State vs. Doyle, 40 Wis., 175.

question of whether employers' liability insurance is in accord with correct public policy.

A Massachusetts court, in a standard and much-quoted decision, ruled on this point very early in the history (1891) of American employers' liability insurance; holding that "it is the legitimate function of accident insurance companies to meet the demand for insurance against the consequences of injury to the persons of others, understood by every man engaged in business to exist as a consequence of his business."[5]

This decision, ruling arbitrarily and without due knowledge of facts or due limitation of its own scope, has furnished a common-law foundation upon which to erect an unrestricted business which, we shall presently see, is undermining the legitimate ethical and economic basis of every industry with which it comes in contact. We may fairly infer that the learned court took this unsophisticated view of the situation under the impression that these policies protect the employer only against the legitimate, unforeseen and unavoidable risks of industry. We are also justified in noting that the opinion failed altogether to take into account the fact that an indemnity contract based on future injuries to a third party, in which that party has absolutely no specific voice or "insurable interest," must tend inevitably to make the assured master unduly negligent of the welfare of his uninsured workman. As a matter of fact, no policy now written says anything which can be construed as a refusal by "the Company" to defend or indemnify the master for the consequences of taking illegal risks—except that most companies refuse specifically to defend cases arising through the employment of persons of unlawful age. As a result, our courts are now crowded with cases where insurance attorneys are defending employers alleged or proven to have taken such risks.

Scant as are the provisions of state law controlling insurance contracts and settlements in general, and employers' liability insurance in particular, the Federal Courts look with still less favor upon any effort to bring the business under original Federal jurisdiction. We have no Federal insurance laws, and the U. S. Supreme Court[6] has decided that, even when insurance contracts are made between a citizen in one state and a corporation in another, the duty of regulating such contracts is a matter wholly in the hands of state authorities. "Insurance contracts, even of this interstate character, are not subjects for Federal regulation. Such intercourse is not commerce, but an incident of commerce."

Unless the contract states to the contrary, insurance under an employers' liability policy is a matter wholly between the company and the assured, *in which the workman has no voice and no interest in law or in equity any more than in any other property belonging to his master—the master is the assured and not the workman.**

Since the policy is not an asset of the employee,[7] the latter cannot sue "the Company" on it, and no trust or prior claim is impressed in his favor on any money which the policy agrees to pay.

5. Emps. Lia. Ass. Corp. vs. G. S. Merrill (Ins. Comr.), 155 Mass., 404, 1891.
6. 178 U. S. 389, 401, N. Y. L. Ins. Co. vs. Craven.
* Mack. Cy. of Law and Practice, xv, 1039, 1905.
7. Hawkins vs. McCalla, 95 Ga., 192.

If the policy so states, however, the contrary is true and any trust fund to be created by a payment from the insurance company is impressed with the workman's claim, and cannot be alienated by bankruptcy or by any subsequent agreement between the company and the master.[8]

The trust fund just referred to is brought into existence by a form of insurance written under the title of Workmen's Collective Policy. Under this policy the employer is not insured against *liability*, but "the Company" agrees to compensate the workman on a fixed schedule for injuries received during service, irrespective of their source. This policy on its face does not protect the employer from suits, and is, therefore, often supplemented by an Employers' Liability Policy; but in practice, a release is apt to be exacted, or otherwise secured from the employee, as a preliminary to any payment of indemnity, so that the policy furnishes a strong safeguard against litigation. The cost, which is considerable when compared with that of the ordinary liability policy, is usually met by joint contributions from master and men—from the latter by deductions from the pay-roll. The fund cannot be diverted, and is not an asset of the employer in case of bankruptcy. This form of insurance—very crude as it is written in the United States—is a product of the conditions imposed on English industry by the Workmen's Compensation Acts of 1897 and 1906, and is the best and most just policy written in America to-day, since it is based on injury irrespective of liability, and its benefits are limited only by gross negligence or by violation of the terms of the policy. Unfortunately, although "the Company" agrees to pay certain sums, it is also authorized to take on itself the settlement of any claims, and it is not difficult to see that this leaves an avenue open for unfair settlements, which may not be at all in accord with the agreed terms. Except that the "settlement clause" should be modified, the policy is an admirable one; but the manufacturing public does not seem to take kindly to it, for not more than 2 per cent. of the insurance written to cover workmen's injuries takes this form ($465,000 in 1908).

The employer, unless the contract is so worded that he may not take advantage of his injured workman, may collect any money due from the insurance company, provided the company can be induced or forced to pay it, and may then lawfully pocket the same without the workman having any more lien on the money paid in the final transaction, than he had voice in the initial contract. In the early days of employers' liability insurance the records of the courts show that this actually took place—usually just before the assured and his assets disappeared in the bankruptcy court—without the insurance company being able to prevent it, even if it had wished. Nowadays, however, policies are so worded that the employer must show, if required, by an actual money payment (not in notes or promises)[9] in liquidation of the damage to the injured workman, before the Company becomes in turn liable to the employer under the policy. Thus "the Company" in recent policies agrees to reimburse the assured for "loss and expense actually sustained and *paid in money* by him after an actual trial of the issue;" this may leave its treasury a reasonable chance to remain undepleted, if the assured happens to be bankrupt and unable to raise the money—as required under the policy—to pay a heavy judgment.

The courts have repeatedly been obliged to compel insurance companies to satisfy workmen's judgments against insolvent employers, the

8. Richards on Ins. Law, 666, 1909.
9. See Kennedy case—post.

companies seeking to shelter themselves behind the insolvency of the master in avoiding the payment of a claim which he cannot pay himself.

The cases of Kennedy vs. ———— Ins. Co. (Minnesota, 1907), and Anoka Lumber Co. vs. ———— Ins. Co. (63, Minn. 286, 1895) are of interest in this connection. In the Kennedy case the injured employee—a girl—secured a judgment against the employer. The latter became insolvent and could not pay the judgment, and on the assured making a demand that the Company should pay it, the latter refused on the ground that the policy agreed to indemnify only after the assured had himself actually suffered the loss. The assured then paid the judgment in promissory notes, and, a second demand on the Company being refused, brought suit and recovered the full amount.[10] Since this date (1907) many companies have changed the wording of the policy from "liability to pay" to read "and paid by him in money," or "losses actually paid in cash after a trial of the issue," although certain companies used that phrasing prior to the Kennedy decision.

In the Anoka case an employee was injured, and after some time brought suit. The assured failed to notify the Company until the suit was entered, and the latter refused to defend. The man secured a judgment against the assured, practically by default, and the Insurance Company refused to settle. The assured then sued the insurance company and secured a judgment, but in the meantime, prior to the judgment, became bankrupt and went into the hands of an assignee. The workman garnisheed the insurance company and recovered the full amount, with interest, which was paid, by the order of the court, direct to the workman.

The court held that under the policy (contract) the assumption of management and liability carried with it the assumption of payment; and that the Company was liable to the workman after judgment against the Master, without the master having paid the judgment. When, in the policy, the Company forbade the assured to settle, the Company assumed the liability, and, therefore, the payment; the duty of making this passed to the Company, and garnishment proceedings against it after a determination of its liability were valid.

Furthermore, the assignee had no interest in the judgment, since that asset had no existence at the time of the assignment—a suit is not an asset.

Without undertaking to discuss the merits of these important decisions, there is reason for thinking that, in several of the doctrines laid down in the Anoka case the opinions of courts and lawyers have since undergone a somewhat radical change—this is especially true of the opinion that any claim could lie against the Company until a judgment was paid in money, or its equivalent, by the bankrupt assured.

American insurance authorities agree that, unless compelled to do so by the court, or by the legal conditions surrounding individual cases, *they would pay no money to or for the injured employee of a bankrupt employer.* The English Workmen's Compensation Act (1906) safeguards the workman against thus "losing out" against a bankrupt employer by providing that in case of bankruptcy, the right of the employer against the insurance company "shall be transferred to and vested in the workman."[11]

These are not the only cases where an insurance company has sought, through the exercise of legal talent in developing latent features of its contract, to escape a fulfillment of its part after a judgment has been rendered against the assured. In a Massachusetts case,[12] where an acci-

10. Richards on Ins. Law, 3d Ed., 1909, p. 670.
11. 6 Edw. 7, Ch. 58, S. 5, par. 1.
12. Worcester St. Ry. Co. vs. ———— Ins. Co., 62, N. E. 364.

dent caused *instant* death, the assured—although a judgment was rendered against him—failed to secure indemnity from the insurance company, because the policy insured "against common-law and statutory liability," and in Massachusetts the old common-law maxim *actio personalis moritur cum persona* still held good in case of instant death. Many of the Employers' Liability policies now written contain the phrase "against common-law and statutory liability."

3. *The omissions of the law. "What the law sees not, is not."*

Whilst representatives of insurance corporations are constantly in court "to defend, at their own cost in the name and on behalf of the assured," interests which are really their own, it is only when a radical difference arises between their company and its customer, or when the latter, as in the two cases just cited, becomes insolvent and the former seeks to shelter itself behind the insolvency from paying a judgment, that "the Company" appears before the bar under its own name. In the defense of the ordinary employers' liability case, often conducted solely by the company's lawyer, the direct mention of the insurance company is altogether out of order, and the jury rarely receives more than an inkling that the employer is insured, or is not defended by his own attorney. It is only infrequently that insurance companies allow their liability policies to undergo clarification in the open light of court. The companies, which have nothing to gain from publicity or from having the legal points in their policies subjected to too close judicial scrutiny, are usually able to escape their dilemmas without going into court, and there are surprisingly few decisions from the upper courts in which the insurance company appears under its own name.

We may search in vain for any statutory or common-law provision designed to protect injured workers from unjust settlements at the hands of adjustors. Through the failure of statutory law to specifically limit or prohibit these secret transactions, and through the refusal of the common law to take unfavorable notice of them or to consider them contrary to public policy, every court is forced to wink at such settlements, even though it knows them to have been conducted secretly and under the unrestricted control of the insurance agent. The last contingency usually contemplated by the adjustor, is that the methods by which settlements are procured shall become matters of public record, and there is not under present law any avenue over which such details and terms can be brought to and kept in the daylight. The mere formal contract of release is all that reaches the record, and the law has nothing to say as to the limit below which settlements with the unprotected workman shall not descend.

It is hard to believe that these methods and results, when subjected to intelligent scrutiny, can be reconciled with a frank view of correct public policy. For, under ordinary conditions, the mere fact that certain transactions avoid the daylight would serve the more to arouse the suspicion that they need statutory illumination; and the more we press the present investigation—whether from the standpoint of abstract equity and ethics, or from a study of the practical working-out—the more is the suspicion confirmed that the entire system is not only wrong fundamentally, but

that in the execution of details great injustice is being done under cover of the present lack of state regulation.

If the writer is correct in his reasoning, it is not difficult to demonstrate that employers' liability insurance, as at present sold in the United States, has no industrial, ethical, or moral—and should have no legal—right to exist, unless it presents itself in a very much altered form, is conducted altogether in the open, and is subjected to stringent and well-enforced laws such as are in force in England and continental countries. The basic principle of honest insurance is protection of the law-abiding individual against unforeseen and unavoidable risks. With such insurance one can find no legitimate basis for controversy. The present basis, however, of American liability insurance *is protection of the employer against the consequences of such forms of non-criminal negligence as even our own liberal law has in many cases declared to be foreseeable, avoidable and punishable.* Were this not the case manufacturers would not pay for liability insurance at the extravagant rate at which it is now marketed. The average employer probably suspects in an indefinite sort of way that the premium which he pays is altogether out of proportion to the money handed back to the injured employee, but he is willing to pay it in order to be allowed to pursue unmolested any profitably negligent course which he chooses to take. Under the terms of these policies negligence is authorized and expected—else why the policy? By many employers the high cost of insurance is frankly offset against the supposedly greater cost and inconvenience of constructing and maintaining safeguards. That much of the risk against which he thinks best to insure himself is contrary to law, requires very little investigation to prove. That it is clearly avoidable, is shown in other countries where the passage and enforcement of drastic laws has nearly eliminated this class of risk. If a policy which insures "against loss by reason of liability imposed by law," or "against common-law and statutory liability" means anything, it means that it proposes to protect the assured against the consequences of certain unlawful acts, and it is hard to reconcile such contracts with correct public policy. One might just as logically expect a citizen to take out insurance against the consequences of his own embezzlement, or other violation of criminal law, as to lawfully insure himself against the civil consequence of unlawfully injuring an employee through avoidable negligence—except that one is a statutory crime, and the other a common-law tort, whilst both are encroachments upon the fundamental rights of the individual. A natural stimulus to respect for these rights is a penalty; if the penalty is previously contracted for—where is the stimulus?

That insurance companies recognize their proximity to the danger line in such plain statements of the purpose of their contracts as are quoted above, is shown by the fact that some companies have recently changed this brutally frank wording, to read "against loss arising on account of bodily injury"—"by reason of the business,[13] etc.," which is substantially the same thing, but veiled decently enough to pass judicial inspection.

13. See Morrill (Mass.) case, already cited, for the reason for this change.

IV. ETHICAL.

Let us now consider somewhat in detail certain ethical aspects of the unguarded opportunities afforded to insurance adjustors, through the omissions of our present laws, and through the power granted the companies over both employers and employees under existing insurance contracts.

We may omit, as not bearing exclusively upon the consideration of employers' liability insurance, any study of the methods adopted by the companies, as agents for the assured, in openly litigating claims on strictly legal grounds, and by the legitimate use of common-law technicalities. In the use and abuse of the ordinary methods of law, insurance representatives stand in no isolated position, but avail themselves of technique and advantages which are open to all litigants under our present legal system. The consideration of such defects in law and technique is a logical part of another discussion—the general failure of our common law to convey exact justice to the injured workman, and has nothing to do with a consideration of employers' liability insurance *per se*. The blame for any legal failure to appraise compensation for injury, should not be laid at the door of the litigant or his agent who accepts the common weapons at every one's hand, and uses them according to the recognized rules of legal warfare.

But there is another view of this subject—quasi-legal in its character—which may properly attract and hold our attention, and that is the question of agency and fiduciary relationship, raised by these secret and uncontrolled transactions out of court, which "the Company" conducts, in the name of the assured, against its unskilled and unincorporated antagonist. Under the terms of the policy all matters pertaining to the settlement of claims are taken out of the hands of the assured, and turned over to experienced adjustors, with secret instructions as to maximum payments, and—under certain companies—*carte blanche* as to methods. The assured agrees broadly "to render such cooperation and assistance as is requested and in his power;" "to aid in effecting a setlement;" and "not to voluntarily assume any liability, or interfere in any negotiation for settlement or in any legal proceeding, or incur any expense, or settle any claim, except at his own cost, without the written consent of the Company." Agreements of this kind, when held up to the daylight, are ominous in their lack of definition, and in the absolute power and scope which they give the adjustor over both the workman and his master.

This ominous view of the prophetic uncertainty of the settlement clause of the employers' liability policy is fully justified by a study of systems of settlement, as worked out by adjustors. A majority of the actual settlements are effected under some form of pressure, and rarely are the scales held evenly. Occasionally, the obvious advantage lies with the workman and his master feels the pinch of an exorbitant judgment bred of a sympathetic jury, but in the finer and closer cases, and in those cases which never reach a judicial tribunal, the advantage undoubtedly goes—whatever the equity may be—to the player who is

in the game all the time—professional against amateur. Such cases constitute, both in number and in the aggregate of amounts due or paid, an enormous majority of the annual total of industrial injuries. It has been said that not more than 10 per cent. of our injured workers ever receive any compensation at all for their injuries. The writer is not prepared to accept so general and unsupported a statement, but it is very certain that many claims—small in themselves and for but a few days' wages, yet which are just and entitled to recognition under an equitable system—are ignored altogether, both by "the Company" and the employer, as safely negligible. And yet in the aggregate these amounts present a large annual loss to Labor, and a corresponding gain to Capital as represented solely by the insurance corporation. The smallness of each claim effectively precludes the workman from undertaking the trouble and expense of litigation, and under the terms of the policy "the Company" only "becomes liable to the assured for loss actually sustained and paid by him in money after actual trial of the issue," so that between the master and "the Company" the workman goes entirely uncompensated.

We have abundant evidence to show that, in the adjustment of more important claims, the representatives of even the best companies are occasionally tempted to encourage their assured to practice various forms of intimidation and persecution in the effort to settle advantageously.

In an Illinois case[14] which reached the higher court in 1908, on a petition for a rehearing by an insurance company (rehearing denied), the following appears to have been shown to the satisfaction of the lower court:

A mechanic in the employ of a certain foundry received an injury for which he was subsequently awarded $1,200. The foundry carried an employers' liability policy, and after suit was brought discharged the mechanic. He went with a committee from his union to the master, who told them the man was discharged at the instance of the insurance company, and would be reinstated, if the consent of the latter could be secured. On visiting the insurance office, the man and his committee claim they were told that "the Company" did not propose, if it could be prevented, to allow him to earn from the assured the sinews of war with which to do the fighting—the consent was refused. After the workman won his suit against his employer, he brought suit against the insurance company for "wrongfully procuring his discharge with intent to injure him." His principal witnesses were the several members of the aforesaid committee. A good deal of inflammatory testimony and argument were introduced in the lower court, which undoubtedly influenced the jury in awarding exemplary damages. The testimony furnished by the union committee was denied by the insurance official with whom their conversation took place, but his testimony was overwhelmed by preponderance on the other side. There is good common sense ground for believing that the official, out of his large experience, was not indiscreet enough to have made the incriminating statements attributed to him, but in view of the fact that the committee members were well drilled in their testimony, and of the farther fact that without doubt the Company actually did cause the man's discharge, the verdict probably represented no fundamental injustice. In fact, the appellate court said, "there is evidence in the record which if believed by the jury would justify exemplary damages." "An employers' liability insurance company which procures the discharge of an employee, who has sued his employer for personal injury, with intent to injure him, is liable to said employee."

14. Gibson vs. ———— Ins. Co., 83 N. E. Rep., 539.

In another Illinois case,[15] the testimony was more unquestionably genuine and still more damaging to the Company, and a farther interesting point is raised in connection with the attitude of the employer.

A mechanic employed by a certain bicycle factory lost two fingers in the service, and refused to "settle" for a nominal sum. After a number of conferences, the man was told by an agent in the presence of his foreman that he would be discharged if he was obstinate; on refusing, the foreman was told that he must discharge the man, or suffer immediate cancellation of the policy. The foreman protested that he had plenty of work for the man, and that he was welcome to remain in the service, but discharged him rather than have the policy cancelled. The policy contained nothing authorizing a demand for the discharge of employees, other than the usual clauses establishing a fiduciary relation between the Company and the assured, and requiring the assured to render all required assistance in the settlement of claims. Furthermore, it was expressly stipulated that prior to cancellation a certain time must elapse after notification. The man was subsequently awarded a verdict against his employer for the injury. He then sued the insurance company for maliciously procuring his discharge. It was not denied that the master had the right to discharge the servant for any cause, but it was contended and upheld that the Company had no right to use its influence to procure such a result. The plaintiff was awarded $800 for "wilful and unjustifiable interference with his known right," and on appeal the judgment was affirmed.

Aside from the obvious intimidation and improper use of influence held by the courts to have been practiced by the insurance companies in these illustrative cases, interest is aroused in the second case by the seemingly contradictory attitude of the master and his representatives, which was throughout friendly toward the servant and hostile toward the insurance people. It is not likely that the injured man would have won his suit against the Company without both the master's secret encouragement and open testimony. Whilst this sympathetic attitude was of itself a proper one toward an employee who had suffered an injury, it cannot be denied that by it the assured threw embarrassment in the way of the Company in carrying out its part of the contract, and took a position which he would never have assumed had he been engaged in defending his own interests. The fact is clear that all of the parties here occupied unnatural and illogical positions, and that these positions were due to the existence of the policy and the improper operations of the insurance representatives.

In connection with the two cases just cited, we may also observe that one of the worst features of the present system is that though the adjustor is occasionally caught and his Company penalized for violating the constitutional or common-law rights of the workman, there is no rule or method designed to prevent him from turning around and doing the same thing over again, but with less chance of being caught napping the second time. *Experientia docet,* and the competent adjustor needs no post-graduate course in covering up his tracks. On the other hand, his antagonist is always new at the business and rarely persistent enough or blessed with funds sufficient to crowd any legal advantage which chance may have thrown in his way. Since the violation of the class of personal rights usually infringed is rarely criminal, any punitive prosecution must be undertaken personally, by the individual most interested,

15. Horn vs. ———— Co., 206 Ill., 493, 1903.

as a civil suit for damages, and with no great prospect of collecting evidence convincing enough to produce a verdict which would stick in the upper courts. For this reason adjustors are usually safe from positive punishment in any position they may assume, and at the worst, merely find themselves defeated in an isolated case in the attempt at coercion.

Occasionally, an irascible or high minded employer finds himself crowded too closely by the clause requiring his assistance in effecting a settlement, and refuses absolutely to be a party to methods which go against his moral grain. More commonly the master says nothing, but quietly "pulls the other way," and takes a certain grim satisfaction in putting an inopportune spoke in the wheel of the adjustor when the affair reaches the psychologic moment. It is not unlikely that when suits for undue influence of the kind just referred to have been successfully prosecuted, the workman has always received secret encouragement and assistance from his master, or open support after the cancellation of a policy. Very few courts would be disposed to censure the latter for his attitude, even though it may have been contrary to the terms of the contract. Not every master is sufficiently steeled to the appeal of the workman whose labor has added to his prosperity, to refrain from secretly rendering him that needed help and advice which the insurance contract would oblige him to withhold. Human nature places a bond between the primitive master and servant akin to that between father and son, and natural law would lead the two to council together over any terms of compensation offered by an insurance adjustor, even though the rights bought under the policy were entirely those of the master. It may be granted that the policy creates fiduciary relations between the master and the insurance company, which the master is in honor bound to respect, or else to request its cancellation if he finds himself placed by the demands of the adjustor in a situation repulsive to his normal inclinations. But the truth is, this wholly artificial instrument and the system which it represents, if pushed, usually does place the master in a hopelessly inconsistent position toward his servant, from which he cannot extricate himself without embarrassment and loss of self-respect, or without violation of that natural law which is even more mandatory than the obligation imposed by any insurance contract. If the master and his workman possess normal and healthy instincts, *and are let alone* by third parties whose actual interests are purely selfish and foreign, they are usually abundantly able to adjust their difficulties and resume their normal relations in a friendly spirit—probably with some mutual sacrifice, but recognizing throughout the fundamental economic law that the master and servant are close partners and absolutely necessary to one another in productive industry.

If the master undertakes, through ignorance or avarice, for his immediate advantage, to mar or modify this primary relation by the introduction of an agent who has selfish and foreign interests,[16] he at once destroys what should be a most cherished asset—the voluntary goodwill and confidence of his collaborator in the field of industry. The same is,

16. The Missouri Supreme Court describes this as "intermeddling and maintenance."

of course, true of the servant who allows himself to be persuaded to make use of that questionable legal talent which is promptly proffered to every injured workman whose name happens to be entered upon the blotter of a police station. It takes very little discernment to see that these sacrifices of personality on the part of either master or servant entail also a pitiful sacrifice of moral sense and obligation.

That such a system—enormously profitable to go-betweens and extravagantly wasteful to the real and most vitally interested principals, secret in its operations and uncontrolled at present by any laws which are capable of reaching it—stands on no true or honorable footing of economic ethics is now sufficiently obvious. It can make for no permanent industrial peace. At its best, it is an expensive, temporary and short-sighted expedient, un-American in its ignorance of the spirit of openness and fair play, and utterly lacking in the philanthropic and equitable spirit which characterizes either the voluntary systems of English Friendly Societies, or the compulsory state insurance of modern ing aspect—the system is admirably calculated to breed in the three par- continental Europe. At its worst—and this unfortunately is its prevailties to the transaction a curiously assorted trio of human vices—in the employer, indifference to human suffering, and the extinction of the normal philanthropic instinct; in the workman, loss of self-respect and resentment against society as represented in the person of his master; in the adjustor, sharpening of the spirit of cunning avarice, with corresponding debasement of the sense of justice.

V. THE RESPONSIBILITY.

Left to itself, and unhampered by statutes, employers' liability insurance follows the economic law of supply and demand. It is a legitimate function of the insurance company, organized entirely from a commercial standpoint, to furnish, for profit, to the manufacturer any article which the latter thinks he requires in his business, provided the law raises no obstacle to the transfer and use of the commodity. The responsibility, therefore, both for the demand, and for the neglect to make available an easily accessible and lawful means of regulating and administering the supply, rests altogether with the public.

There is good foundation for the statement that on account of this lack of suitable state regulation—which the state has the right at any time to institute—and because of the absence of reliable actuarial basis on which legitimate co-efficients of risk can at present be calculated, employers' liability insurance as it is now written is not at all attractive to high-class insurance companies which seek to maintain even a reasonable standard of self-respect among their staff of agents and adjustors. Officials of these companies are not slow to express the hope that we are approaching a period in the evolution of this class of insurance business where the law will require radical changes in all its present objectionable features. It is true that liability insurance continues to be sought and written by the best companies, and that the volume of this business is constantly increasing, but the opinion is probably correct that these

policies are not forced upon the market, and that the true source of the business lies in the demand from the uneducated manufacturing public itself. Without undertaking to mitigate or condone many of the questionable and possibly often unauthorized methods of insurance adjustors, we believe that primary responsibility for the evils of employers' liability insurance lies not with the company now legally entitled to sell and adjust it, but with the employer, who buys and shelters himself behind it, and with the public which is too lazy to avail itself of the right to regulate it. "At the devil's booth are all things sold." It is a common saying that the public usually gets what it wants; the converse is equally true, that the public rarely takes, even from insurance agents, that for which it has no appetite. Nowhere is this more true than in the choice of insurance by the American employer. For example, the Companies have for many years offered employers the choice of *two* policies covering accidents to workmen; one a straight liability policy, merely giving protection to the master and without provision for the workman; the other, the Workmen's Collective Policy (1895) already referred to, constructed on modern English and German lines, and designed to provide specifically for the injured workmen irrespective of liability. What the manufacturing public thinks of this policy—which is always highly recommended by the best companies—is seen from the insurance statistics for 1906: $22,000,000 in premiums for straight employers' liability insurance, and $465,000 for workmen's collective insurance—2 per cent. of insurance carried against the industrial disabilities of workmen, 98 per cent. carried to protect against employers' liability for negligence!

VI.—THE OUTLOOK.

Without far-reaching statutory enactments, we must look in vain for a remedy to cure a situation which is largely the outcome of the failure of the common law to adapt itself to modern conditions, and to the negligence of legislatures to remedy this failure by statute.

The impending and inevitable working out of such a new departure in industrial legislation in our country, as well as the revision of the few old laws bearing on this problem, must be accomplished by enactments of a specific and technical character, devised by commissions and experts thoroughly familiar with the economic and constitutional details of the problem for which they are seeking a statutory solution.

The better and wiser insurance authorities are not slow to recognize these vital and permanent weaknesses of our present forms of employers' liability insurance. A close and impartial study of the situation leads the observer to the conclusion that the business, although enormous and still increasing, is now being conducted by the companies on an admittedly temporary basis, in the anticipation of the much-needed changes to be brought about by amplification and modification of the insurance statutes. Nor does it appear that such a legal chance—if not so drastic as to be absolutely destructive—would be unwelcome to the insurance world. In fact, most intelligent agents are quick to concede that the necessary changes would bear most heavily on negligent employers, and

on dishonest methods of getting business and of settling claims, and that the legitimate business would remain elastic enough to adapt itself—as is the case in European countries—rapidly and profitably to the changed conditions of law. Insurance risks would become better capable of classification. Disability due to industrial diseases would receive adequate recognition and protection. Much of the money which now goes for litigation would be spent jointly by the companies for inspection. Intelligent dealers in liability insurance would welcome an active and efficient central board of inspection, such as now exists for fire insurance, whose preventive duties would commence automatically with the issuance of the policy. The cheaper companies which are only able to keep alive by cutting rates would disappear; the illegal and dangerous risks which are now hawked about the insurance market would be unable to re-insure themselves after burning the fingers of any one company, and would be forced to write their own insurance. The workman would be amply protected against his master's bankruptcy. All settlements would be effected in the open, and their terms would become a matter of record and based by law on fixed allowances for disability. Such settlements would be obligatory on both the master and the workman, and would be effected through special tribunals before which the workman would have to bring his case. The ordinary courts would be freed from the burden of these cases. In consideration of the fixed compensation which the master would make for all industrial injuries, claims for damages against employers, based on "common-law or statutory liability" for negligence, would be abolished. So also would be the defense which the master now makes on account of his servants' negligence. So that in all ways the business would be confined to legitimate lines, with known payments, conducted by a limited number of companies, based on reasonably stable standards and reliable coefficients of risk for each industry. The conception of such a status is in no way Utopian; employers' insurance—not employers' liability insurance—as it is now written in European countries, is but an illustration of that great and successful regeneration which has overcome all forms of industrial law and procedure in every country of Europe.[17]

THE LYMPHOID MASSES—THE PART THEY PLAY IN INFECTIONS GAINING ENTRANCE INTO THE BODY.*

F. E. Auten, M.D.
BELLEVILLE, ILL.

The lymphatic system has not in the past received the attention that it merits by reason of its importance in the body economy, and also on account of the part it plays in carrying infections and the struggle it makes against this infectious invasion.

17. The reader who would familiarize himself with the method by which this revised system may be worked out, would do well to study the history and details of the latest English Workmen's Compensation Act (1906).

* Read before the St. Clair County Medical Society, April, 1909.

The parts of this lymphatic system that we deal with to-day are the lymphoid masses in the nose and the throat and, incidentally, in the ileum. The latter are merely mentioned here since we are unable to influence them. Not so, those in the throat.

These lymphoid masses or nodes are simply aggregations of lymph cells, so-called phagocyte white blood cells, adenoid cells. These form the parenchyma of the mass, while the partitions consist of fibrous tissue. These masses are the only open portals to the outer world. The cavities of the body communicating with the outside are lined by epithelial cells. These lap and overlap each other like the shingles on a roof, and underlying them is a fibrous layer or basement membrane of connective tissue, offering a double protection against infectious material.

The structure of a mucous membrane is beautifully adapted for protection, and only in those areas where the lymphatic system communicates with the mucous surface do we find open portals. These crypts in the lymphoid masses are ideally constructed to give entrance to infectious organisms. The phagocytic function formerly ascribed to the lymph cells called attention to this peculiar arrangement of the crypts. These cells were called the warriors of our physical being. They were pictured as rushing out into these open spaces and grabbing up bodily the germs, and then and there strangling them to death; and I learned to frame up in my mind a sort of hero-worship for these doughty little lymph cells, the phagocytes. They may perform this function; if they do, not as we then thought.

The lymphoid masses that we find on these mucous surfaces are in extra-uterine life apparently functionless, for when removed in toto the individual is a healthier being. This has been true without a single exception in our small field of experience. I believe that if it were possible to extirpate all the lymphoid masses, namely, the so-called tonsillar ring in the throat and Peyer's patches in the ileum, we would find this to be the greatest prophylactic advance made in the history of medicine. Unfortunately, we cannot reach Peyer's patches and thus eliminate the typhoid ulcer and tubercular ulceration in the ileum. But in the throat we can. These tonsillar masses are as useless in extra-uterine life as is the appendix. Who ever heard of a bad effect following a clean tonsillar operation? By that I mean in the body economy, in the physical and chemical processes of the body. I have never heard of such. As regards the ductless glands, like the thyroid, etc., this cannot be said. While we do not understand their function, yet when totally removed the bodily metabolisms suffer. Not so, after removal of these lymphoid masses in the nose and throat.

You naturally ask why these bodies are present, and why they apparently increase in size during early life. I cannot answer this, nor have I ever seen an answer that would stand analysis. I have sometimes thought that they may have had a function in intrauterine life. We do not know how waste materials in that period of existence are thrown off. We do not understand what compensates for right heart circulation. It may be that the lymphatic system plays a part, and that these bodies

perform a definite function in getting rid of effete material, or in equalization of the blood pressure. The skin, the lungs, the bowel, the kidney, the right ventricle—all these lie dormant in intra-uterine life. Might it not be that the lymphoid masses then perform their function? This is a mere dream, yet it is possible that these bodies, as well as the lymphatic system, may play some part during intra-uterine life that is not manifest to us, compensating for the functions of other organs that awake with a bound the moment the child cries and takes air into its lungs, and the right heart, skin, intestines and kidneys begin to act.

I said this may be a dream; yet who knows what a dream is or how it may reveal ofttimes the secrets of the hidden world. But we need not dwell on this, for we have more tangible and definite reasons for our views on this question.

I am a believer that prophylactic medicine is by all odds the best medicine, and our greatest progress has been made in this branch in recent years, and I make plea to-day for prophylaxis along this line. Many of the diseases of childhood have their initial lesion and initial symptoms in the throat. Almost all of them. What does this mean? It means that through these exposed lymphoid masses infection gains entrance and is carried by deep cervical lymphatics directly over the body. In all these diseases, note the deep lymph nodes in the neck, and you will find them enlarged. Trace them down, and you find these lymphatics going on to the bronchi, lungs, pleura, and peritoneal cavity. These lymphatics communicate directly by open stomata with the pleural and peritoneal cavities; and after all what are the peritoneal, pleural and pericardial cavities but open lymph spaces, a part of the lymphatic system, of which these lymphoid masses in nose and throat and ileum are the open portals to the outer world? The joints of the body, lined with synovial membrane, are also part of this lymphatic system; the muscular interspaces are likewise lymph channels See how joint, muscular, pleural, pericardial, peritoneal troubles follow throat infections. How many times have you observed articular and muscular rheumatism occur in the wake of an active or latent tonsillar trouble? The worst cases of rheumatism, articular and muscular, often follow old latent tonsillar infections. We hardly realize there is anything wrong with the throat, yet all at once there is an awakening in the old tonsillar trouble, and a violent attack of rheumatism ensues. Our therapy for tonsillitis has for years been the same as for rheumatism. We recognized in that way the origin, yet did not fully recognize all, and if we had, it would have availed us little, for we had no means of getting rid of these infected tonsils, until a modest laryngologist in Chicago, some seven years ago, did a complete tonsillectomy in capsule, thus showing us that we could eradicate these infected masses and cut off these infections.

Until then we feared that complete removal in capsule would result in the death of the patient from hemorrhage. The medical profession owes to this modest worker in the field of throat work a debt of gratitude, for he has made it possible for us to arrest the drain of infection into the body from the outer world via the throat.

Dr. O. Tydings, of Chicago, was the first to do an enucleation of the tonsil in capsule, thus establishing tonsillectomy as the ideal operation, in that it completely removes all diseased tissue and the healing process fills in this space, completely cutting off this path of invasion. I wish to state here, that Dr. Tydings has never, until lately, writen a paper on this subject attemping to show his priority in this work, nor is he known to the profession as its originator, except to a small coterie of fellow workers in Chicago. Soon after he perfected this operation, six and one-half years ago, I had him come down and operate on seven cases. His technic has somewhat changed from his first method; he now uses a sharp knife to separate the pillars instead of a dull hook, which he then employed. He thought he would have less hemorrhage by tearing tissue than by cutting it, but he has since learned that a sharp knife does not increase hemorrhage and yet facilitates the work.

We can now remove a pair of tonsils completely in capsule in from three to five minutes, causing the patient only a short period of pain and inconvenience. It is not the intention of this paper to go into the technic of this operation, but rather deal with the pathological phase of the lymphoid masses. It is just as necessary to thoroughly remove the pharyngeal mass, or the so-called adenoids, as it is the faucial tonsil. Ofttimes have I carefully removed the faucial tonsil and failed to remove the adenoids, and thus got only a partial result; for it is only by eradication of all this tissue that you get the ideal results. I have seen a piece of tonsil no larger than a pea be productive of the severest constitutional invasion, thus permitting a severe attack of rheumatism and failure of the patient to obtain the great benefits that otherwise follow.

Consider the ear trouble arising from inflammation of the throat on account of latent and active infection in the tonsillar masses. This can be benefited permanently only by clean work. We will not deal with this phase of the subject.

The backward child in school, whose body and brain are loaded with these toxins, whose progress in school is hindered, in whose life much is wanting that makes childhood happy—to it this operation comes as a Godsend. The family physician, whose life work brings him at all times in contact with child-life, has a grave responsibility in this matter. He, and he only, can do so much for the future health of these little ones, as well as for the future man and woman. It is the duty of every physician to be always on the lookout for disease in these lymphoid masses. This is readily recognized. You can tell at once whether they are infected by simply following down the anterior cervical glands with your finger. If they are enlarged, you need not look into the throat to make your diagnosis. It is already made. I care not what the outward appearance of the lymphoid masses is, if the anterior cervical glands are enlarged, you have an infective process in these masses, and they should be removed. I care not what size the tonsils are; the smallest tonsil is frequently the most diseased, while, on the contrary, the larger one may not be infected. The old idea, that a tonsil must be so large as to mechanically interfere with breathing or the act of swallowing before its removal is necessary,

is not true. Far worse than this type is the small submerged infected tonsillar mass.

Dr. Edwin Pynchon, of Chicago, many years ago made this statement, yet only within the last seven years has it been accepted by nose and throat men generally. You have often heard the good old family physician, who truly loved his work and families, say, "Just wait awhile until adolescence, and these bad tissues and adenoids will be atrophied by Nature." Such advice is bad, for during these years the child's health is often ruined, and it does not develop physically and mentally. You often hear, "Has he or she enlarged tonsils?" This is not the question, but rather, "Has he or she infected tonsils?" And if so, the anterior cervical glands will be enlarged, and thus by simply passing the finger down the chain of these glands, you can make the diagnosis in less than a minute. I have purposely repeated this, for it should become the habit of every physician to make such an examination in every child he comes in contact with. It should become a fixed habit, and you will be surprised to find how many are afflicted with this condition. Then go further, and see that the patient has these masses removed completely; then watch day by day and you will note that the glands will decrease in size, the child brighten up and gain in flesh, and the appetite improve, and a new child will be given to its parents.

In after life you will observe far less of rheumatism, tuberculosis, endocarditis, pericarditis—in fact, much less of inflammatory conditions affecting all the large lymph spaces.

I cannot leave this subject without alluding to that dreaded infection, tuberculosis, the great white plague, which has and is decimating our race. I believe that these lymphoid masses are responsible for much tubercular infection. How easy it is for the tubercle bacillus to lodge in crypts, to be swept into the lymph channels, to be lodged in the cervical glands in the neck or in the bronchial glands, or in the pleura or peritoneum, and thus carried over the body!

I am following the subject of tuberculosis as carefully as I can, and here and there, among the students in this field, I find some worker who has recognized this fact; but I am astonished that so few have realized the part that these masses play in tubercular infection. I believe they are often the seat of the initial lesion of this disease, which is thence disseminated. There is one observation I wish to make in this connection, and that is, if after tonsillectomy you find anterior cervical glands that do not become reduced to the normal, they are generally tubercular. All other infectious glands will reduce when the drain is cut off.

Endocarditis of childhood, and even mature life, is always ascribed to the so-called rheumatic condition; that only means, due to some infection, and that infection gains entrance through these tonsillar masses oftener than in any other way. So instead of considering the joint and muscular infections as the cause, look to the initial cause. The so-called faulty metabolism and uric acid diathesis theories were good explanations

for the etiology of rheumatism, and looked well on paper, but to-day we know that the majority of all cases of articular and muscular rheumatism are due to specific organisms that gain entrance through the portals which we are discussing to-day. There is not a single infection invading the body which will not produce articular and muscular manifestations. Rheumatism to-day is not an entity. It means not one disease, but a manifestation of any or all infections that may gain access to the body. What affects the muscles and joints may likewise affect the delicate heart valve and muscle, so that much of endocarditis and carditis and pericarditis in childhood as well as in mature life is produced by those infections that are introduced by way of the lymphoid masses of the nose and throat and ileum. One of the closest observers that I know said to me that he never saw a case of endocarditis in childhood that did not have infected tonsils and enlarged anterior cervical glands, and that he believed the sources of the infection in these cases were the lymphoid masses of the throat.

At this point I wish to speak of another condition seen in childhood, and which is ofttimes a puzzle to us, and that is acute nephritis. Many a case of acute tonsillar infection will be followed by albumin and also by casts in the urine, indicating an acute inflammatory condition in the kidneys, and the family physician then wonders if his diagnosis of tonsillitis was not actually a diphtheritic type. This is not necessary at all, and in the acute cases of nephritis in the young—and sometimes in those of mature age—the ordinary tonsillar infection is the cause, being a streptococcal or staphylococcal infection. Like those cases that follow diphtheria and scarlet fever, any infection, in fact, no matter where its point of entrance, or of what type it may be, will produce acute nephritic conditions.

It may seem to you, as you listen to this paper, that we have put the lymphoid masses into bad society, more so than fact will justify. All I ask of you is to give this subject close study for the next five years and I will wager that you will come out an enthusiast.

If this hastily written paper will give to you a desire to study the matter closely, and if I have been the humble instrument in inducing a single individual to do so, I will feel amply repaid for writing it. It is a grand subject for thought, research and observation, and if we are right in our observations on this point, how much good can be done by all of us in the future for the health of those who come to us in early life suffering from infection gaining entrance to the body through these masses!

If a five minutes' operation is going to accomplish so much—and I not only believe but I know that in the small experience I have had with tonsillectomy such has been the result for the last six years—if it will give to our little patients free breathing, good appetite, strong, vigorous bodies and sound minds, how great then must be our incentive to investigate and carry on this work, which brightens so much child life and has so much benefit in it for future men and women.

AUTO-VACCINE IN TRAUMATIC INFECTIONS.*

C. R. G. Forrester, M.D.
CHICAGO.

I desire to say that this treatment applies to cases where injuries have been received and there is a mixed infection caused by grease, dirt, rust, etc.

The first case I treated by auto vaccine was Case A. Upon examination March 12, 1908 I found him suffering from an infected wrist and forearm, with diffuse swelling of the upper arm. He carried a temperature of 102 to 103 and a corresponding pulse. Local and general systemic treatment would not control the condition. March 14 an auto vaccine was prepared from the case by making an incision at the point of the elbow, placing the serum on a culture medium and sending it to the Chicago Laboratory. Examination of the specimen revealed the presence of the *Staphylococcus albus et aureus.* The auto vaccine prepared contained five hundred million bacteria to the c.c. March 18 the temperature was still high and the patient was complaining a great deal about the pain, whereupon I injected in the other arm one cubic centimeter of the prepared vaccine. March 22 I gave another c.c. At this time the infection had become localized; I found a point of fluctuation on the inner side of the upper arm, made an incision and liberated a quantity of pus. April 3 I gave him one and a half c.c. of auto vaccine. The swelling and discharge in the arm rapidly decreased. April 9 the temperature was 99.4; pulse, 92. At this time the opening in the arm had healed and in a few days the case was discharged as cured.

The second, Case B., 39 years of age, was sent to me Nov. 5, 1909. He had been injured Oct. 31, 1909, receiving a lacerated wound of the scalp about the vertex of the skull. This wound was about two inches in length, separating the periosteum and exposing the bone to a considerable extent. Examination showed him suffering from an infection which began to spread over the head and face and simulate an erysipelas. November 7 the temperature was 102.8; pulse, 108. November 8 I placed a specimen obtained from the discharge coming from the scalp wound on a culture, and a report with the auto vaccine was returned to me November 9 from the laboratory, stating that they found streptococci and a few staphylococci, and that the auto vaccine prepared contained three hundred million bacteria to the c.c., with further instruction to use a *graduated dosage.* At the time the man's face was decidedly disfigured, the eyes being completely closed, and he had considerable difficulty in breathing. The symptoms at that time were typical of erysipelas and he was carrying a temperature of 99.6 at 11 a. m. to 102.8 at 10 p. m. November 14 at 11:30 a. m. the nurse's records show that I gave him 12 minims of the auto vaccine hypodermically in the right arm, and at 1 p. m. the temperature was 99.4; pulse, 80; respiration, 20. At 10 p. m. the temperature was 103; pulse, 90; respiration, 20. At 12 p. m. it began to drop to 101; 88; 20, and continued to drop

* Read at a meeeting of the Chicago Medical Society, March 9, 1910.

from then on until morning, when at 8 a. m. it was 97.8; 76; 20. It continued to rise slowly until 11 p. m. November 15, when it was 98; 80; 20. The swelling began to decrease, the patient rested easier, and the discharge from the wound was markedly decreased. November 18, which you will see was five days after, I again gave him 12 minims of the auto vaccine. The temperature this time did not rise at all, but remained at 97.8. The patient rested quite easy, swelling much decreased and he sat up in a chair for about one and a half hours. November 19 he was again given 10 minims without any temperature reaction and he was up and walking around. From this time he continued to be up and about. November 22 he received 15 minims, and November 28 another 15 minims, and was discharged December 1.

An interesting point in this case is that when discharged December 1 the wound was completely healed, but December 31 he came to my office and examination revealed a small granulating sore over old scar, from which I removed a spicula of bone, and when he returned for observation Jan. 2, 1910, the wound was completely healed, and he was again discharged and had no further return of trouble.

The third, Case C., is a boy, aged 15 years, who was injured Jan. 15, 1910, by falling a distance of about forty feet, sustaining a compound fracture of the upper incisors and necessitating their removal. The molars on both sides of the upper jaw were driven up into the antrum of Highmore. The lower jaw was fractured through the symphysis and compounded, simple fractures at both angles and the left articulation driven into the external auditory meatus; impacted Colle's of both wrists; a separation of the olecranon process of the right elbow, together with compound fractures of both femurs. The shock was too great to resort to any extensive operative procedure outside of a certain limited amount of prophylaxis. In the course of a few days he developed an infection in the right leg, of a very severe nature, the wounds discharging a considerable quantity of pus and the patient carrying a high temperature and pulse. At this time I had him on double inclined splints. Feb. 2, 1910, I took a specimen of pus from the leg and placed it in a test-tube and brought it to the laboratory, where it was developed and showed medium-sized Gram negative bacillus, Gram negative diplococcus and a few large Gram positive bacilli. An auto vaccine was prepared by the laboratory, containing three hundred million to the c.c. February 8 at 9:30 a. m. I injected four minims. By 12 m. temperature was 101.2; pulse, 110; respiration, 20, and by the following morning about 100; 116; 20. The pus was still discharging freely. February 11 I gave him five minims at 9:30 a. m. The temperature at 12 m. of that day was 101; 104; 20, and by 9 p. m. 102; 120; 20, and by 8 a. m. following 100; 118; 22. The discharge from this time began to diminish to a certain extent. February 16 at 9:30 a. m. I gave him 7 minims and by 12 m. the temperature was 100.8; 108; 18; by 8 p. m., 102; 120; 20, and by 8 a. m. 99.8; 108; 18. The pus by this time began to change from a thick yellow to a seropurulent; the patient's color and appetite were better. February 19 at 9:30 a. m. I gave 5 minims. At 12 m. the patient was sleeping. At 4 p. m. the temperature was 102; 120; 22,

and at 12 midnight temperature 100.4; 118; 20, pus diminishing steadily. February 24, 5 days later, I gave four minims at 8:30 a. m. Temperature at 12 m. 102.2; 110; 22, and at 8 a. m. next day 101; 120; 20. At this time I had controlled discharge to the point where there was very little coming out of leg, but the auto vaccine seemed not to be able to control it any further, so on March 1 I again took culture and the report showed the Gram negative diplococcus still present in small quantities and a new short Gram positive bacillus quite numerous. March 4 I gave 5 minims of this new vaccine, but have not had time to ascertain any changes as yet. This case is still under treatment.

In closing this paper I wish to say that this form of treatment can be safely used and exceptional results obtained. You may find cases where there is a mixed infection and your first auto vaccine does not include them all, in which event you can use the vaccine anyway and eliminate these forms which your auto vaccine contains and then take a further culture, make your second auto vaccine and use it the same as before. It is needless to say here that with this form of treatment hygiene, diet and elimination take an equally important part.

ACUTE DIFFUSE GENERAL SUPPURATIVE PERITONITIS:

REPORT AND PRESENTATION OF AN INTERESTING CASE.*

LEON FEINGOLD, M.D.
CHICAGO

Before taking up the treatment of these cases in general, permit me to report and present to you this interesting case:

On the evening of Jan. 9, 1905, I was called to see this then very sick boy whose brief history as obtained from his mother was as follows: Frankie W., seven years old. Family history negative. Previous history: had chicken-pox when four, and bronchitis when two years old; otitis media purulenta, lasting two years, between the ages of two and four, otherwise well up to onset of present illness.

Present Illness.—He was taken ill Jan. 4, 1905, with severe abdominal pain and occasional vomiting which the mother tried to relieve with remedies given to her by the family physician. Two days later the vomiting was more pronounced and he was unable to retain even a spoonful of water. This kept up until the evening of January 9, four days after the onset, when I was called to see the little patient. I found him in the dorsal decubitus, breathing with difficulty at the rate of sixty per minute, pulse 160, temperature 104.3 F. rectally; his tongue was dry, abdomen greatly distended, as were also the abdominal veins; the tenderness was diffuse and coprostasis existed.

With such a brief clinical history a diagnosis of general diffuse suppurative peritonitis caused very likely by a ruptured appendix was the only logical conclusion. I advised immediate operation as the only alternative of saving the boy's life and ordered his removal to the hospital.

He was operated on the same evening at the Columbus Hospital. An incision about three inches long over the usual McBurney's point was made, and on opening the abdomen I found a non-adhesive diffuse general suppurative peritonitis. The pus was thick and creamy, resembling the pus of an acute urethritis. The bowels were black and on the peritoneal covering of same ulcerative patches the

* Read before the North Side Branch of the Chicago Medical Society, April 8, 1910.

size of a quarter could be seen in close proximity to each other. I immediately reached for the appendix, which I found without difficulty and which, to my surprise, was not responsible for the peritonitis. It, however, had the appearance of the other intestinal coils. I amputated and ligated the same and dropped the stump back in its place. The abdominal cavity was drained from all its four corners with gauze and gutta percha tissue. No sutures were taken through the abdominal wall. A large, moist, ice-cold occlusive dressing covering the entire abdomen was applied and the patient placed in bed in a modified Fowler position—the head of the bed elevated.

Postoperative Treatment.—The moist dressings were ordered changed every four hours; 1-2-3 enema every two hours to reduce the abdominal distention, 1/120 gr. strychnin and 1 gr. of glycogen hypodermically every four hours and only a spoonful of hot water per mouth for the first twenty-four hours, given every fifteen to thirty minutes, increasing the amount daily, and a half pint ice-cold normal salt solution per rectum every six hours. This method was kept up for five days. At this time the abdominal distention was reduced at least 75 per cent. Liquid nourishment was now ordered every two hours; at first two ounces at the time, increasing the quantity daily. The drain I commenced to withdraw on the fifth day, replacing smaller pieces of gutta percha daily. By the seventh day all of the original drain was removed, the wound wiped out with moist gauze and new drainage introduced consisting of twisted gutta percha tissue. From now on the above form of drainage was daily renewed. Temperature during the first three weeks registered between 100 and 101 F., pulse ranging between 90 and 110, and wound all this time draining well.

On the evening of February 4 the boy developed a severe spell of coughing and his temperature went up to 104 F. per rectum. I examined his lungs and found moist râles and a consolidated area in the lower left lobe. The wound was examined and found that it had stopped draining. I thought that the patient developed very likely a septic pneumonia. I ordered symptomatic treatment. On the following day when I arrived at the hospital the nurse informed me that the patient during one very severe spell of coughing brought up a large quantity of pus which she kept to show me. Such a clinical picture naturally suggested to me that the boy had either an empyema or pulmonary abscess, breaking through a large bronchus, as the temperature following this happening dropped three degrees to 101 F. per rectum, the dulness disappeared, but some moist râles still persisted. The patient was now taken to the dressing room and on inspecting the wound I found that there was hardly any drainage compared with the profuse drainage of the day before the development of the pulmonary symptoms. I then began to question his mother more closely as to his condition prior to the onset of his abdominal symptoms, especially with reference to coughing, to which question she answered that he had been coughing for two or three weeks before he had taken sick with abdominal pain. The diagnosis now, as to the origin of the peritonitis, after adding the additional facts relating to his previous history, together with the clinical developments, was very clearly the result of a ruptured left empyema through the diaphragm.

The patient was dressed twice daily for about ten weeks until the wound was almost entirely healed, with the exception of a fistulous tract leading from the original wound across the median line to the left side then curving upward to the left pleura. This strengthened my position in the correctness of the final diagnosis.

The tract persisted in spite of all efforts to heal it, until I made a perpendicular incision on the left side on a previously introduced block-tin sound, laying the tract open, curetting and packing same with iodoform gauze. The horizontal tract extending across and joining the right and left incisions was also curetted and packed in the same manner. The packing was gradually withdrawn, beginning on the fifth day, and when all the gauze was removed the drainage was left out entirely. The wound at the end of two weeks was entirely healed, and on March 6, 1905, about four months from the date of first operation, the patient left the hospital. The boy is now, as you see, in perfect health and has grown very rapidly.

In order to be able to treat these cases scientifically we must understand that while peritonitis is an infectious process caused by the same micro-organisms as infections elsewhere in the body, the effects when the peritoneum is involved are very different and a great deal more serious owing to its peculiar anatomico-physiologic arrangement.

The peritoneal surface consists of an endothelial covering upon a basement membrane, beneath which a framework of connective tissue richly supplied with lymph channels and blood vessels exists. This membrane is capable of absorbing from three to eight per cent. of the entire body weight in one hour.

Muscatello's experiments show that no stomata exist in any part of the peritoneum with the exception of the diaphragmatic peritoneum, especially its central portion. He also proves that this absorption is by way of lymphatics, the blood vessels playing very little if any part.

We must also bear in mind the want of resistance of certain regions to infection, namely the enteronic and diaphragmatic portions and the tolerance manifested by other parts, namely, the pelvic, pericecal and pericolonic portions. This fact is usually explained on the anatomic basis of the size and number of lymphatics. Neither must we lose sight of Wegner's assertion based on experiments and clinical observations, that the normal peritoneum is capable of absorbing enormous quantities of fluids and disposing of large quantities of infectious matter. This absorptive power of the peritoneum is its protection against infection. According to Grawitz the peritoneum is capable of disposing of large numbers of pathogenic bacteria provided that they are introduced without injury to the tissues themselves and provided also that there was not introduced with them or quickly accumulating a quantity of putrescible substances greater than the peritoneum could absorb or encapsulate in one hour. Any destruction or alteration of the endothelial surface of the peritoneum lessens the capacity for absorption and increases the danger of progressive infection. The pathologic effects of peritoneal infection depend upon the number and virulence of the infecting organisms; the presence of suitable conditions for growth; the degree of leucocoytosis excited and the capacity of the peritoneum to dispose of the micro-organisms while they are yet limited in number. Above all else, we must bear in mind that the main feature of the disease is not local pathology, but the condition of toxemia which is the most serious and which plays the most important rôle in the ultimate reckoning as far as the patient's recovery is concerned. The local pathology denotes the resistance encountered by micro-organisms. The toxemia indicates the rapidity and degree of systemic absorption. The latter is consequently the one that interests the surgeon most as this condition determines his plans for scientific treatment.

The bacteriologic study of peritonitis is full of confusion from a clinico-diagnostic standpoint. A classification, therefore, based on the physical findings appeals to us more for its scientific exactness; it admits of clinical adaptation, it forever destroys the false hope of internal medication and spurs the surgeon on to action very definitely guiding him in his undertaking.

In view of the above facts and careful observation of this and other cases, also our knowledge of the history of peritonitis from reports in the medical and surgical literature for the past twenty-five years, I feel justified in formulating a law, guiding us in the scientific management of general diffuse peritonitis.

1. As soon as the existence of diffuse general peritonitis is established, operate irrespective of any knowledge of its causation, after a low enema (1-2-3 or 2-4-8) is given.

2. Upon entering the abdominal cavity, unless the cause can be eradicated with ease without any injury to visceral structures, the sooner we leave the cavity and the more efficient our drainage, the more certain are the patient's chances of recovery.

3. Irrigation should never be employed. Allow as much of the pus to escape as intra-abdominal pressure will force out. Any additional interference on the part of the surgeon will be at the expense of the patient's life.

4. The question of drainage. While rubber and glass drainage are still employed by some operators—their patients recovering in spite of their use—I prefer the soft form of drainage such as gauze or gutta-percha, one alone or both combined, and I feel justified in making the assertion that a much larger percentage of recoveries will result from the latter. The drainage is facilitated by the modified Fowler position, i. e., elevation of the head of the bed at an angle of 45°, which position is maintained from four to eight days. This allows the pus to gravitate to the least absorptive part of the peritoneum and to the drained region.

5. The after-treatment: The proper after-treatment is as important as the proper management of the operation. When the operation is completed I use a large moist occlusive dressing covering the entire abdomen. This dressing is changed every three to six hours. If the patient's temperature is above 102.5° F. rectally, ice-cold boric solution is used for the moist dressing. If the temperature is lower, hot boric solution is employed.

Normal salt solution per rectum, warm or ice-cold according to the temperature, is given either by the drop method or one-half pint at one time every four to six hours; one-half to one hour before the normal salt solution is given, a 1-2-3 or 2-4-8 enema should precede its use; this will relieve the distention and clear the rectum. When the drop method is used it is discontinued when the time for the enema arrives.

No cathartics should be given for a week unless the cause of the peritonitis is certainly not due to any loss of continuity in any part of the alimentary canal and even then not before three days; for the same reason food and even water, unless given in teaspoonful doses, are withheld for about two or three days, and if the patient's condition has improved by that time, small quantities of water and liquid nourishment in gradually increasing amount is allowed. The quantity of liquid required by the body is maintained by the normal salt solution given per rectum. This compensates for the deficient amount allowed per mouth.

The hyperpyrexia is controlled by cold sponging in addition to the ice-cold moist dressings and the ice-cold enemata. In cases of hypopyrexia, heat instead of cold, is employed. For the pulse strychnia and, if necessary, digitalin, adrenalin or some other form of stimulant is given hypodermically. I always combine in these cases one grain of glycogen with the stimulant. For pain morphin is very seldom resorted to as the pain is usually due to gaseous distention, and a 1-2-3 or 2-4-8 enema for the flatus will invariably relieve the pain. If the use of any morphin should at all become necessary, one or two doses after the patient wakes from the anesthetic will suffice. The deliberate use of the drug in these cases does more harm than good and is very often the cause of an obstinate ileus which is responsible for the fatal termination of the case.

The original drain should not be disturbed earlier than in four days and not later than ten days, for several reasons: 1. the drain can then be withdrawn with very little pain as the young adhesions which early cling to the drain become later on converted into smooth moist granulation and no bleeding follows its withdrawal; 2. The danger of tearing up protective adhesions, thus reinfecting the restored viscera, is greatly minimized or entirely done away with; 3. The large opening which is maintained by the large amount of drainage used will not collapse as readily if the same is not removed too early. For the same reason it is advisable not to remove all the drain at once, but parts each day, replacing smaller pieces. When the last of the original drain is withdrawn a fresh one is introduced daily until the opening discharges very little, when the drain is left out entirely and the wound allowed to close. This I find from my personal experience in these cases will be on an average of from three to six weeks.

When the surgeon will attack general peritonitis the first hour of its recognition, not waiting for any quiescent stage of the disease, and the after treatment carried out according to rules based on sound scientific principles, an undreamed of low mortality table will make its appearance.

2502 N. Clark Street.

CHRONIC OVERWORK.*

ALICE HAMILTON, M.D.
(Memorial Institute for Infectious Diseases, Chicago.)
CHICAGO.

There are few subjects more interesting to the physiologist than that of fatigue and exhaustion, and much brilliant work has been done in this field during the last quarter of a century. First, we have Helmholst, Ranke, Du Bois Reymond and Gautier demonstrating that exertion increases albuminous breakdown, uses up oxygen from the red corpuscles more quickly than it can be replaced, causes the formation of toxic alkaloidal leucomaines and changes the reaction of the muscle juice from alkaline

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to acid, through the production of sarcolactic acid and carbon dioxid. Then we have Mosso demonstrating the presence of those products of fatigue in the blood by means of his famous transfusion experiments, producing fatigue in a resting dog by transfusion of the blood of an exhausted dog. Finally, we find Weichardt claiming to have found, not in the blood, but in the muscle fluid, a true toxin, the toxin of fatigue, with which also it is possible to produce experimental fatigue in animals.

Now, normally, these waste products or toxic substances are burned by the oxygen of the blood, destroyed in the liver, excreted in the kidneys, and the albuminous waste replaced by appropriate food. For a full restoration after exertion, then, there must be an abundant supply of oxygen, sufficient food and, above all, cessation of activity, rest or better sleep, for only during sleep is the consumption of oxygen decidedly diminished. Vitiated air, extreme heat with sweating, insufficient or unsuitable food retard the elimination of the products of fatigue. Even when the necessary factors are all present, if there is not sufficient time allowed for these changes to take place, if the period of rest is too short, there results a condition of chronic fatigue, the weariness of one day lapses over to the next, the organism never returns to a perfectly normal condition, but is in a state of chronic autointoxication, and the effect is actually cumulative, for experiments have shown that ordinary work is much more injurious to a tired muscle than heavy work to a fresh muscle.

Now, overstrain may be the result of excessively hard work or of an excessively long work-day. In both cases the results are the same, for long hours make the very lightest work injurious to health. Fatigue in industry, chronic fatigue as an industrial disease, is attracting more and more attention; indeed it is said by German and Italian writers to be the most important subject of that new branch of industrial science, the "pathology of labor." Modern industry is characterized by increased subdivision of labor, which means monotony, by increased use of machinery, which means increased speed and increased risk of accidents, and by seasonal fluctuations, which means an enormous sudden demand on the strength of the workers at irregular intervals.

As for the influence of monotony, Mosso's famous ergographic experiments showed that mental weariness exerts an inhibiting influence on muscular effort. If the work consists in the monotonous repetition of processes which are absolutely uninteresting, the sense of fatigue develops more rapidly than when the psychic factors of interest and curiosity are present. In our factories the range of work is often very limited, the employee may have to make only a few simple motions over and over all day long, while all interest in the finished product is eliminated because he is engaged upon only one minute detail of the whole process.

The use of machinery, of what are called labor-saving devices, has been far from beneficial to the health of the workers in many instances. Men who have worked on the old-fashioned looms in Scotland tell us that a 13 and 14-hour day at a single loom was not as exhausting as an 11-hour day at a number of machine-operated looms working far more rapidly and needing constant alert watching. In the New England tex-

tile mills women now run 12 and 16 Draper looms where they formerly ran only two, and with each increase there has been an increase in the speed of the loom, and therefore in the intensity of attention required of the worker. Imagine the closeness of attention needed by the girls in our underwear factories, controlling the work of power sewing machines which now carry from 2 to 10 needles apiece.

To the monotony and the closeness of attention required by workers at high-power machines is added, in some instances, the strain of avoiding accidents. Take the laundry workers, for instance, who tend the mangles. They must place on swiftly moving heated rollers the flat pieces of linen, which are immediately caught and carried under the upper roller. A moment's inattention may mean the loss of a finger or two, even of a hand. The same risk is run by workers in canning establishments, and, unfortunately, in both these industries the work is carried on under the most exhausting conditions, namely, in a tropical atmosphere, hot and overcharged with humidity.

As to seasonal overwork, Emil Roth of Berlin states that in his opinion "the injury to health inflicted upon even fully capable workers by the special demands of a periodically heightened rush of work is never compensated for later on." Such seasonal overwork obtains in many trades, notably the clothing and the canning industries, as also in the department stores during the rush season, when the girls may be kept at work until midnight or 1 o'clock and required to be on hand again at 8 in the morning.

All the evils of speed and monotony in industrial establishments are intensified by the piece-work system, under which it has been found possible to increase the pace of the workers to such an extent that one or even two cuts in wages must be made after the system is instituted in order to keep to what is considered a normal wage. Under the piece-work system a factory hand will race with himself, will endeavor each day to accomplish more than at the same time the day before. This is an element in industry especially important to us Americans, for it is the consensus of opinion that work is carried on at a higher rate of speed in this country than in any other.

The pathologic effects of chronic fatigue are said to come under the following heads:

1. Effect upon general nutrition.
2. Effect on the nervous system.
3. On the resistance to infection.
4. On the causation of accidents.
5. On the moral habits.

Every practitioner has seen repeatedly the effects of chronic fatigue on general nutrition, the anemia, the distaste for solid food and craving for stimulating drinks, the digestive disturbances and obstinate constipation. It is really impossible to make a distinction between this class of disturbances and the functional nervous disorders which follow long-continued overwork, for, as Mosso has shown us, there is really only one kind of fatigue. Whether the exertion is primarily performed by the

muscles or by the brain, the effect is found in the nervous system. The literature on functional nervous disorders following overwork is of very serious import. v. Lindheim of Vienna studied the effect of two typical modern industries, railroading and electrical work, on the health of the employees. He compared 98,000 of these men with 388,000 workers in older trades, and found that there was a persistently greater contingent of nervous disorder among the former. He considers nervous diseases as the most characteristic phenomena of our modern industries.

Erb, of Heidelberg, writing on "The Increasing Nervousness of Our Times," says: "In all grades of society, among the poor and wretched, as well as the intellectual and wealthy, neurasthenia is clearly a more widespread evil than formerly. It is to be found with shocking frequency among factory workers and sewing women." Schönhals made a study of 200 cases of neurasthenia and hysteria in the Workingman's Sanatorium at Schonow. Twenty-eight per cent. were due to overstrain, piece-work playing an especially injurious rôle. In 10 cases this was the only discoverable factor.

In the working-class sanatorium of Beelitz the records in 1897 showed only 18 per cent. of the patients neurasthenic, but in 1904 the proportion had increased to 40 per cent. In 1906 over one-half of the men patients and one-third of the women patients were cases of functional nervous disease; 35 per cent. were suffering from cardiac neuroses.

The Italians also note that neurasthenia, formerly supposed to be exclusively characteristic of the intellectual classes, now extends widely among those workers whose labor is mechanical and monotonous.

Insanity is also on the increase in the working classes, and according to Binswanger, it is more apt to develop between the ages of 20 and 30, when the physical and mental strength of the wage-worker are put to the greatest strain in the struggle for a livelihood.

As to the effect of overwork upon resistance to infection, it has been proved experimentally by Charrin and Roget that animals who could in a state of rest survive a dose of anthrax, succumbed to the same dose administered when they were exhausted. Wounds originally clean, in exhausted animals usually lead to general infection, not in the control animals; indeed, a mere scratch might lead to a general septicemia in an exhausted rat. According to Cohnstein and Wetzel, the loss of alkalinity in the blood after great exertion means a loss of bactericidal power in the blood. Not only this, but the number of leucocytes is also diminished by fatigue, sometimes by half. Here, perhaps, is the explanation for the unduly high morbidity rate of tuberculosis in certain industries, which are not inherently detrimental to health, but in which the pace set is so great that chronic overstrain is the rule.

Statistics as to industrial accidents in England, France, Germany and Italy show that there is a direct connection between fatigue and the carelessness which results in these accidents. The hours from 11 to 12 in the morning and from 4 to 6 in the afternoon are the hours of predilection for accidents. They are more numerous during the latter hours of the morning than during the first hours after the noon-day rest, and during the afternoon they increase progressively.

Finally, as to the effect of prolonged overwork upon the habits of the workers. It is the general testimony of those who know well this class of society that exhausting work leads to a craving for excitement, so that even the short period of leisure allowed is not all used for rest. There is a loss of self-control and an increased craving for the stimulating effects of drink. Swiss factory inspectors report that drunkenness and sexual excess are found in those regions where excessive hours of work obtain. This is said by Mosso to be the direct result of exhaustion: "It lessens the power of governing the passions by reason, the nobler qualities being submerged for the time and the savage in man reasserting itself." As an instance, one might cite the charge of intemperance and crimes of violence so often brought against the Slavic employees of the great iron mills in Pittsburg, South Chicago and Gary. These men work twelve hours out of the twenty-four for seven days in the week, with a periodical twenty-four-hour stretch every two weeks when the shifts change.

There is a very significant sentence in one of Féré's works which may well be quoted here: "Idleness has been called the mother of all the vices, but fatigue is no less prolific, for fatigue increases desires and lessens self-control."

THE RESPONSIBILITY OF THE MEDICAL PROFESSION.*

HENRY BAIRD FAVILL, M.D.
CHICAGO.

The title of this talk rather suggests, as I look at it now, something of the nature of a homily as to what the medical profession ought to do. I assure you it is not my intention so much to tell my fixed opinions as to the responsibility of the medical profession, as to open a series of questions that have come to my mind recently in the observation of medical affairs.

I think you all will agree with me that outside of medical ranks, the forces of society which are at present dealing most earnestly and most intelligently with questions of health are profoundly impressed with the problems presented by the general health of the community, the health of the public. All of the organizations which are dealing from a philanthropic or a sociologic standpoint are convinced that there is no question before the minds of the people of the world to-day more important than the question of public health. This is not from the standpoint of philanthropy particularly, but from the standpoint of the state, from the standpoint of conservation of the efficient, active, indispensable factors in statehood. The preservation of the health, vitality and productive capacity on the one hand, and the prevention of dependence and helplessness on the other. This matter has become so crystallized in the minds of the intelligent leaders of sociologic thought that all of the operations of public officials and of state interests in this matter are focusing rapidly in a given direction.

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Of all the things which these forces in society are endeavoring to encompass, nothing is more important than the subject of industrial disease. It is rather trite to say that the mortality and disability of a single year, unnecessary and preventable, is greater than that of any war that ever occurred, and yet this is the case year after year, and the forces of public opinion and the machinery of public interest are rapidly coming to recognize that something must be done to eradicate this wanton, unnecessary destruction of life, efficiency and independence.

I want to call your attention briefly to the great difference there is so far as this investigation and effort is concerned, between mortality and morbidity. We have, or can have, very reasonably accurate statistics on mortality, but we have in this country practically no statistics, no data upon morbidity. We know that people die and when and of what they die, but we have practically no knowledge as to how they got sick, when they got sick, or the relationship of their conditions of life, their work or habitation or whatever it may be, to their sickness. Now, it is in regard to this phase of the matter that I particularly wish to call attention. Unless we can find some way of determining what the morbidity factor is, what the amount of sickness is, where it arose, what its relation was to the conditions in which it arose, we are getting nowhere in our treatment of this great question of industrial diseases.

The question is, How are we going to determine these facts as to morbidity? How are we going to find out who is sick, how he or she got sick, and what the logical relationship is to the conditions of life, work and habitation? It is just at that point, it seems to me, that the responsibility of the medical profession is vital. Who knows in general the question of sickness? The doctors. Who knows the conditions of the sickness and its incipient stages? The doctors. Who knows the probable relationship to conditions of life, habitation, resources, wages, hours of work, industrial conditions generally? The doctors. Who else knows it? Nobody, so directly. The charitable organizations know it finally in the stages of relief, but the medical profession taken in detail knows it and knows all about it, at the beginning and from the beginning on.

This constitutes, in my judgment, a reason why the medical profession should charge itself with the responsibility for gathering, collating and preserving, and where necessary handing on to proper organizations the facts of morbidity in the people with whom it is in contact. Of course, I am not here to suggest that any one doctor by keeping any one list of cases and reporting them in any way to anybody, could accomplish much. I am talking now of the duty of the medical profession at large, the duty that seems to me perfectly plain, because it is the only factor of any value or efficiency with reference to the question of morbidity. Because it is the sole factor in the situation which is capable of rendering efficient service, I say it is sufficient reason why the medical profession should charge itself with that responsibility. And yet the question may be asked, as it is asked not only with regard to this question, but with regard to innumerable others, Why should we charge ourselves with this? Are we not overburdened with work already that we are not paid for? Do we not render hard, unselfish service to the utmost of

our strength and ability? Are we not already doing that more than any other element in the community? And I think the answer on the whole is, Yes, we are. But yet the question remains, what is our obligation in the matter?

I think, however, there is a phase of this matter, and this I speak of with a great deal of hesitation, because it is not clear, which is of great importance. I speak with hesitation, because I am not quite sure of what I want to say.

We all of us know—there is no physician within the reach of my voice who does not know without being able exactly to explain why—that the whole question of the practice of medicine is undergoing a change; that the whole future of medicine is to be changed by the present tendencies. There is no one here who does not recognize that there is not as much practice as there used to be, and that it is not accidental, but that it is a phase of some evolutionary process. Now, without undertaking to explain that or to go into detail (if I could explain it, this is not the time), I want to call your attention to the fact that the whole medical profession is in a state of transition. The interests of large masses of people are the interests of the medical profession. The practice of medicine is not a mere practice among the aristocrats, the wealthy, or even the well to do. The great facts of the practice of medicine are the facts of the masses of the people. You know that the interests of the masses of people are becoming more and more recognized as the legitimate interests of the state, the legitimate interests of public officials in one way or another, for reasons which are perfectly obvious. More and more we are coming to see the trend of medical affairs as applied to the mass of people going either toward officialism or some modification of officialism. Of this I have no considerable doubt. I think everybody's observation must bear this out. Personally, I cannot look with any great eagerness toward the ultra officialism in the management of affairs. I believe that the modification of officialism would be better, but that there can be only such modification as is incident to and consequent upon an awakening sense on the part of the medical profession, of its importance in public health affairs, and consequently its obligation in public health affairs.

In my opinion, the only way that the medical profession is going to save itself from the smothering influence of state intervention, state dominance, if you like, in the broad and deep affairs of medical practice as related to public health, is by seeing its own importance, its obligation, and hence by its effort to get into such a relationship of indispensable value to the whole subject as to make it the necessary and logical agent through which the state shall operate in the maintenance and furtherance of its public affairs. It is my conviction that the medical profession as a body should undertake and set for itself tasks related to public health, in the nature of conservation of public health and of cooperation with state forces. Such tasks as will clearly demonstrate:

1. The interest of the profession.

2. The capacity of the profession to deal with them, which is by no means recognized now.

3. The fact that the profession cannot be dispensed with in this new phase of its vocation.

And for all of these reasons which I have hastily sketched, it seems to me that the responsibility of the medical profession to the public as a moral issue and as a practical issue is beyond peradventure. And yet I set this forth only as a series of very deep convictions, and as my expression of the wonder that I have as to whether these things are not ripe for action.

SHALL THE GENERAL PRACTITIONER USE THE ROENTGEN RAYS?*

MAX REICHMANN, M.D.,
CHICAGO.

The question whether the general practitioner shall use the Roentgen rays can in general be answered with no, especially in places where a laboratory under the direction of a competent roentgenologist can be consulted. There are several important reasons for this assertion, first of all the scientific and technical one. Even the most skillful and experienced physician cannot produce a Roentgen plate of diagnostic value (except perhaps of the extremities) unless he has mastered the roentgenologic technique, and this he can only do with thorough knowledge of the workings of his apparatus by continued practice. I may compare this technique with that of the use of the microscope, the staining of microscopic specimens, the chemical and bacteriologic examination, etc., all of which demand a study which the busy practitioner for obvious reasons cannot give to them. A second reason, why only an experienced specialist should undertake roentgenologic work is because only he is able, by long experience and comparative study, to interpret correctly the plate, just as only an experienced bacteriologist or microscopist can interpret his specimens. Yes, in my opinion an incorrectly interpreted plate does more harm to the patient and to the physician than no Roentgen examination at all. But also sanitary reasons speak for specialization in this branch of medicine. The roentgenologist, as well as the patient must be protected against the harmful effects of the Roentgen rays and this can only be done in large rooms, because the protecting devices (such as are now-a-days recognized) demand more room than the average practitioner can afford, and roentgenologic work done in small rooms for any length of time is therefore harmful to the health.

Lastly, pecuniary reasons tend to show that the Roentgen examinations pay only when made in large numbers and the figures I have computed show that not less than eight hundred examinations made in a year can render a fair profit. These eight hundred cases are referred to me by

* Read at a Meeting of the Chicago Medical Society, April 13, 1910.

about 30 per cent. of the medical profession in this city. Now, what physician or surgeon has eight hundred cases a year which need Roentgen examination, so that a laboratory of his own would be financially justified?

A few words yet in regard to roentgenotherapy:

In my opinion every Roentgen tube should be labeled "poison" and the medical man using the same for therapeutic purposes must know how and when to use it, and if he does not, he must bear the consequences, which I am sorry to say even specialists in this line have yet now and then to bear.

I think, therefore, that the general practitioner should not be advised to do Roentgen work, but he ought to be posted on the progress made in Roentgen work, he ought to know what the Roentgen rays can do for him either in the way of diagnosis or therapeutics, so that he can tell his patients what to expect from his method of examination. It would be asking too much to expect the general practitioner to know the exact technic of all the specialists' work, and teamwork is the slogan at present of every scientific medical man.

The only members of the State Board of Health who attended the meeting at Danville, were the *de facto* president and *de facto* secretary. In view of the urgent appeals and numerous letters of these two gentlemen, we had expected to see every member, actual and *de facto,* at the meeting, showing at least by their presence that they endorsed all misstatements made by these gentlemen in their communications in the last few months. Their absence lends color to the report by a good authority that not every member of the board endorses the ravings of the ready letter writers.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

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JUNE, 1910

THE SIXTIETH ANNUAL MEETING.

The Illinois State Medical Society convened at Danville for its sixtieth annual meeting, which proved to be as interesting as was predicted by THE JOURNAL in the April issue. We then said that "We believe there is enough solid common sense in the membership of the society to see that justice is done to all the members, and at the same time that the best interests of the profession are not forgotten." And now, after three weeks, as we write, taking everything into consideration, we feel certain that our prophecy has been fulfilled.

Interest in the session had been worked up to a fever heat all over the state by charges on the State Board of Health and the American Medical Association and a large number of members made the pilgrimage to see and hear what each faction had to say of the other. Innovations in the transaction of business and the presentation of papers were made which seemed to increase the interest. The conference of the officers of County Societies served as a curtain raiser and it passed off in good order Tuesday afternoon.

The House of Delegates was called to order at 8:30 Tuesday evening, and it was at once evident that there would be music before the final adjournment of that body. The Chicago delegation called for an exact investigation of the credentials of the delegates from the counties, but this had been carefully looked after by Secretary Weis, and there was practically no contention when it came to a test. Objection was made, and we think very properly, to members of County Societies getting together at the annual meeting and selecting one of their number to act as a delegate. County Societies should be very careful hereafter to select as delegate a member who is willing to give all the time necessary to the duties of that office.

At the first meeting there were 104 delegates on the roll. On the roll call Thursday morning the number was only 101, although a number of new delegates had arrived. At 1 p. m. the vote showed only 66 present, and this when the most important business was up. Had all the delegates present remained at their post, there is good reason to believe that the "Rump Session" of the "Insurgents" would not have been possible.

The session had only gotten well under way when the report of the Committee on Medical Legislation was presented. After some sparring it was voted to have the report put in type and to postpone action on the report until a subsequent session, which was finally set for Thursday, at 8 a. m.

The session proper began Wednesday morning. After the prayer and customary addresses of welcome, response and report of the Committee of Arrangements the remainder of the day was given over entirely to the literary program. There was no division of the papers into medical or surgical sections. Close attention was given to the reading of the excellent essays and a large number were present during the whole day; a fair estimate would be 300 in the hall. Unfortunately or fortunately there were often extended discussions, so that only about one-third of the papers had been finished at the close of the afternoon session.

The open session for the public was held in the magnificent auditorium of the First M. E. Church. Seldom, if ever, has such a large and intelligent audience gathered to honor the State Medical Society, and seldom, if ever, has an audience been so well instructed and entertained, as on this occasion. Dr. C. U. Collins presided while President J. L. Wiggins read his address which, strangely enough, touched on many of the problems which were later discussed by the distinguished professor of the practice of medicine in the University of Buffalo, New York, Dr. Chas. G. Stockton. The oration in surgery was given by that polished gentleman and practical scientist, Dr. Geo. W. Crile, of Cleveland, Ohio, who brought out many interesting facts concerning cancer, the *bête noir*, of medical science. Conservative ground was taken on the etiology, pathology and treatment of its manifestations.

The singing of Miss Genevieve Plaster and the quartettes by Dr Stevens, a dentist, and Messrs. Chilson, Pandt and Telling, were well rendered and enjoyable. The buffet luncheon served in the church parlors was well prepared and conduced to sociability. Cohn's orchestra dis-

pensed music during the serving of refreshments. Here we will remark that at this and every other point of the meeting the local committee on arrangements, and the entire medical profession of Danville were actively at work and did a splendid work in entertaining the society and its guests. This was no small undertaking when it is understood that more than 600 members were registered and besides a large number of exhibitors.

On behalf of the State Society we extend to these gentlemen heartfelt thanks.

The session of the House of Delegates convened Thursday morning in its final session, and the grand climax. The election of officers resulted in the election of:

President—Dr. A. C. Cotton, of Chicago.

President-elect—Dr. W. K. Newcomb, Champaign.

First Vice-President—Dr. J. W. Hamilton, of Mt. Vernon.

Second Vice-President—Dr. J. E. Stubbs, of Chicago.

Secretary—Dr. E. W. Weis, of Ottawa.

Treasurer—Dr. E. J. Brown, of Decatur.

Councilors—Dr. J. F. Percy, Galesburg; Dr. J. W. Smith, Bloomington; Dr. A. C. Mitchell, Carbondale.

Delegates to the A. M. A.—Dr. W. F. Grinstead, Cairo; Dr. J. L. Wiggins, East St. Louis; Dr. J. E. Allaben, Rockford; Dr. S. J. Glidden, Danville; Dr. A. L. Brittin, Athens; Dr. E. W. Weis, Ottawa. Aurora was selected as the next place of meeting.

Alternates—Dr. G. W. Green, Chicago; Dr. G. F. Allen, Aurora; Dr. W. E. Shallenberger, Canton; Dr. G. F. Butler, Chicago; Dr. F. A. Tice, Chicago; Dr. M. S. Mason, Peoria.

Next came the presentation of the printed report of the Committee on Medical Education, read by the chairman, Dr. F. P. Norbury, as follows:

REPORT OF THE COMMITTEE.

Your committee beg leave to report that since the appointment of a Committee on Medical Education at the Springfield meeting of the Society in 1906, the subject of Medical Education in Illinois has not grown of less interest to the profession and people of the state. This subject gains added interest and importance because there are thirteen medical schools in Illinois, to say nothing of the large number of institutions, in addition, which are also teaching medicine in varying degrees.

Your committee, in 1907, inspected most of the medical schools in the city of Chicago. It will simplify matters for your committee, if it is stated that as a result of this investigation, we are in a position heartily to endorse the report of Dr. Arthur D. Bevan, chairman of the Committee on Medical Education of the American Medical Association, which he gave to the Council on Medical Education, held in Chicago, February 28, 1910. The thanks of this society, as well as of every other state medical society in this country, are due Dr. Bevan for the labor he has performed in order to give the country a clear statement of the conditions of medical education as they exist to-day. Our thanks are also

due the Carnegie Foundation for the advancement of teaching for its unprejudiced work along the same general lines of the committee of which Dr. Bevan is chairman. It is to be regretted that the substance of this report is not known to every practitioner of medicine in the state of Illinois. Your committee would like to add some further information derived from their own experience as investigators of this subject, but as it would serve only to emphasize conditions which are already known to be deplorable, it has been decided to pass on to some of the more practical things. It is necessary for us to do this in order to prevent the further overcrowding of the profession with undertrained men; and at the same time protect the unsuspecting would-be doctor from the injury done him by making it easy to enter a profession of which the public is demanding more and more in the way of high grade service.

Your committee is convinced that it would be an improvement to have a separate board of examiners. This much-to-be-desired body, however, can do only a part of its legitimate work, if the physicians of this state do not interest themselves in such a way that they can explain to their representatives the absolute necessity of their refraining from giving special powers to medical sects whose educational standards are far below those required of graduates in medicine. This is unfair, not only to medical practitioners of good repute, but it is a great wrong committed against the sick, who have no means of knowing the qualifications of those who would care for them when ill.

Another wrong inflicted upon the sick by this kind of legislation is the failure to prevent the medical or religious sects from using the name "physician" and "doctor." It would seem to your committee that the most rational and reasonable manner of dealing with this evil would be by the establishment of a single licensing board, as has been done in many of the states, with full power to deal with and determine the qualifications of every individual in the state who professes to heal the sick, no matter under what name or authority he wants to do it. This would give but one way of entering into the practice of medicine in the state, and the plan is earnestly proposed for your consideration and commendation. Any sane man, whether he be a politician or even an ignorant layman, will readily understand that the successful management of disease must be based on the ability to make a correct diagnosis. In order to do this, he should have, indeed must have, training in the fundamental branches of a correct medical education. To have a lower educational standard for the Osteopaths, by way of illustration, is unfair to the sick, to say nothing stronger; and, as well, is a mean kind of political, to say nothing of educational discrimination. In our own state there are but little preliminary educational requirements for those who practice under the "drugless healers" clause of our medical practice act.

As already stated, there are thirteen medical schools doing business in Illinois and charters have been granted for two additional schools this year. In the entire country there are four medical night schools. Three of these are in our own state. It would seem to your committee that some legal check could and should be placed on the indiscriminate licens-

ing of new medical schools. It is within the bounds of legal possibility—at least it so seems to your committee—for the legislature to make a standard of requirements in the way of financial assets, together with other necessary equipment, for successfully teaching medicine, before a charter is granted to those who may want it.

It is said that there is one legally qualified physician in Illinois to every 587 inhabitants. This, as can be readily seen, is far from accurate when the thousands of medical practioners who are not physicians, within our understanding of the term, are taken into account. When, with this, we witness the narrow margin by which some of these sects fail to get all the rights and privileges of practicing physicians from the legislature, the unfairness of present methods becomes impressive. Conditions such as are mentioned above stand as a permanent menace to the legally qualified physicians now practicing in this state. There is overproduction of physicians who are graduates of schools that can by no stretch of the imagination claim proper facilities for teaching medicine. It is folly for your committee to recommend that the standard of medical colleges be raised, without at the same time demanding that their ability to finance the added requirements be also increased.

The day has gone by when a medical college should be run for profit. The great majority of the medical schools in this state are for profit only. This phase of the subject has made possible the fact that our country has almost as many medical schools as all the rest of the world put together. This, again, will account for our low standards of medical education which disgrace us before scientific men of every country. This again reacts upon the human sufferer, permitting of his maltreatment when sick in a way that is unworthy of our best possibilities.

This report would not be complete if it did not tell, in this connection, that there are six osteopathic and other "drugless healer" schools in the state besides the cheap schools already referred to, and that neither our State Society nor any other agency in the state has done, or is doing anything to discourage their existence.

This is our report. Your committee decided that the report would serve its greatest purpose if we told you, as briefly as we could, conditions as they actually exist in Illinois. The economic problems before the profession of Illinois are not visionary or slight. The profession is overcrowded not only with regulars, but with irregulars. The latter are being multiplied at a rate never before experienced by the profession, and practically nothing is being done, either in or out of the profession, to stop it. What is your pleasure in the matter?

Respectfully submitted,

FRANK P. NORBURY,
EDWIN W. RYERSON,
J. F. PERCY. *Committee.*

DISCUSSION.

At the close of the reading of the report of the Committee on Medical Education, Dr. James A. Egan requested the privilege of the floor. We endeavored to get a report of Dr. Egan's remarks, but were unable to secure it. In response to our request Mr. Harry Stine, stenographer, of

Danville, writes under date of May 27, 1910: "I absolutely could not get Dr. Egan's remarks, from where he was standing; it was too low and mumbled for me."

It is worthy of note that Dr. George Washington Webster did not, on this occasion, as is his usual custom, come to the rescue of his friend, the secretary. We believe that he was in the room but remained conspicuous by his silence.

DR. A. D. BEVAN:—I would like to say a few words at this point. Dr. Egan is quite in error when he states that the report of the Committee on Medical Education has not been published. A large edition of about 5,000 copies was published recently and sent to a large number of physicians of this state.

Now, gentlemen, let us simply get down to facts. All the medical colleges in the United States have been visited and carefully examined by this committee. I have personally examined over 70 of these schools, the other members of the committee having visited the remainder of the colleges throughout the country. In fact, we visited all of the colleges twice in order that no mistake might be made. In addition to those inspections, all the evidence about each school has been obtained and carefully tabulated and arranged. These schools are marked on the civil service plan. We marked down points covering the entire school, the failure of their students to pass examinations as required by law in the different states, their laboratories, their teachers, their financial standing, their libraries and everything in connection with that school was taken into consideration, were carefully marked and marked without any prejudices of any kind. We have passed those which are above 70 per cent. We have placed those between 50 and 70 per cent. in the condition column which need improvements and we have pointed out all their weak points and recommended such changes as we thought necessary to place them in the acceptable class. And we have placed those schools in the not acceptable class which were below 50, and have pointed out to them that they would not be acceptable unless they are entirely re-organized. About 70 of the schools are above 70; 34 of them in the condition class, and they have been informed by the committee that they need certain changes and improvements in order to put them in condition to be accepted by the committee. In addition to these, there are those that are so poor that they have no right, whatever, to be recognized by the medical profession. They are a disgrace to themselves, to the city in which they are established, to the state in which the city is situated and to the country at large. Now, of these non-acceptable schools, there are in the state of Illinois five or six, and I want to say that the situation in this state is worse than in any other state in the Union. You, gentlemen, should know the fact. This is not my opinion or the opinion of the committee; this is a fact that can be established by definite evidence. The situation is not only worse here, but in any place in the world. We first visited these schools about five years ago and then made another inspection recently and our second inspection confirms the above facts.

We have no fight with Dr. Egan or with any one else, but I want to state to you gentlemen that the medical society should recognize these facts and we should put ourselves on record that we will do everything possible to clean up this situation. I should be very much in favor of the state medical society and the state board of health and every other agency interested along this line, getting together and cleaning up this situation. Gentlemen, you must recognize the facts as they are.

Dr. F. P. Norbury:—I have read the report of this committee, as well as the reports of other committees on educational conditions as they exist in this country and in the state of Illinois, which have corroborated this report and which have been founded on facts and have had in mind the raising the standard of medical education. Likewise, I have read the report of the Carnegie Foundation. You will find therein a report of the progress made in raising the standard of education throughout the country. It is a statement of facts after actual inspection and not a theory. Strange to say, we are a great deal worse off in this state than in any part of the country. We have made less improvement in this line than in any other state in the Union. More improvement has been made in the South than in any other part of the United States and everything possible is being done there to raise the standard of the medical schools throughout that section of the country, and those of you who were familiar with the work there in times past and are familiar with it now, will recognize that there has been a great improvement made and the high school work there is now standing high and is advancing. This is not a statement of personal feeling on the part of myself or the committee against the board of health, but is a statement of facts as they actually exist. The board of health has had its opportunity in this advancement and they have failed to take advantage of it, and as Dr. Bevan has said, it is time that we recognize these facts and put ourselves on record as in favor of everything possible that will help to clean up this situation and to make the improvements that have been made in other states.

A motion was made by Dr. C. S. Nelson, of Springfield, a delegate from Sangamon County, that the report be laid on the table; this motion was defeated by a large vote. Dr. Pettit then made a motion to receive and adopt the report and this prevailed by a considerable majority. The real temper of the society on matters of medical education was tested when a motion was made pledging the Illinois State Medical Society to the highest ideals in medical education. This, in accordance with the stated object of the society from its very beginning. The motion prevailed by an almost unanimous vote, as was to be expected.

It was at this time that Dr. Lydston introduced his resolution, which immediately caused a great deal of turmoil, and resulted in a scene heretofore unknown in the history of the organization. As soon as Dr. Lydston's resolution was before the house, a delegate moved an adjournment. Vice-President Collins was in the chair, and ayes and nayes being called for, Vice-President Collins declared the motion to adjourn, carried, and was about to leave the chair, when a considerable uproar was made

by a few individuals demanding a roll call. Dr. Collins having declared the house adjourned, very properly refused to grant a roll call. He was immediately surrounded by several parties who made warlike demonstrations against him. He then left the chair and the room, together with all but eighteen members of the House of Delegates and the session stood adjourned. On the departure of Vice-President Collins and others, a minority, said to be eighteen in number, placed Second Vice-President Stubbs in the chair, and we understand pretended to take on the functions of the delegates of the State Society, to the extent of adopting the Lydston resolutions and rescinding other actions of the legitimate house. As the actions of this so-called "Rump Session" have been legally decided to be irregular and illegal nothing further need be said regarding it. The communication from Secretary Weis regarding the Lydston resolutions, printed in this issue of THE JOURNAL, should be read in this connection. Unfortunately Dr. Lydston, for purposes of his own, and Dr. J. A. Egan, for purposes of his own, have published incorrect reports of the proceedings of the society, which sufficed for a time to mislead the profession and the public as to the attitude of the society on certain important matters.

The action of the House of Delegates of the American Medical Association, at St. Louis, in unanimously electing Dr. G. A. Simmons secretary and editor of that organization, effectually disposed of Dr. Lydston's propaganda. The publication of report of Abraham Flexner, of the Carnegie Foundation, and the speeches of Dr. James, of the University of Illinois, and Dr. Abraham W. Harris, of the Northwestern University, fully confirming the Flexner report, at once put a quietus on the contentions of Dr. Egan, that any misstatements had been made regarding the rottenness of medical education in Illinois, or the responsibility of the Illinois State Board of Health, for the disgraceful position in which the people and the medical profession of the state find themselves placed.

This is accentuated by the knowledge, now widely known, that the State Board of Health only exists as a *de facto* board as the terms of four of the seven members have expired some time since. In view of all that happened at the meeting and up to the time of going to press, it will seem apparent to every thinking mind that the contentions of the council and THE JOURNAL regarding the conditions of medical education and the conduct of the State Board of Health have been sustained. The Danville meeting of the Illinois State Medical Society will go down in history as marking an epoch in the history of the medical profession of the state of Illinois.

THE ILLINOIS OSTEOPATHIC ASSOCIATION.

The Association met in Springfield May 25, 26. Its transactions are interesting to our members because of the legislation which these people will request from the General Assembly. The statement had been made that 300 osteopaths would gather and in order to determine the number in attendance and see the appearance of the members the editor attended the first session of the association, which was held in the Senate Cham-

ber in the State House. Instead of 300 members being present there were 32 at the morning session and less than 60 at any of the sessions. In the entire body the number of members appears to be something near 100 and the entire number of osteopaths in the State of Illinois is something near 300. His attendance caused almost as much of a sensation as the appearance of a hawk in a chicken yard in early spring. A local osteopath promptly reported to the president the presence of the intruder.

The subject of legislation was under discussion at the time, and the statements of the members were interesting. One of the gentlemen said that he was in favor of asking the legislature to grant osteopaths the right to practice in all departments, and that he himself, practicing in Chicago, was doing a great deal more than his license permitted. Another member desired to have a definition of osteopathy. His question was answered by one who appeared to be an instructor in the Chicago Osteopathic School, who defined osteopathy as a complete system of physiological therapeutics.

The editor was at this juncture invited to take a seat inside the railing, and accepted the invitation. After remaining a few minutes he was leaving the room when the president, E. M. Browne, of Dixon, called him back and stated that the session was about to proceed to talk on the good of the order, and would like to have him make some remarks. The editor stated that it was impossible for him to take the time just then but would be glad to talk at a later hour if agreeable to the members. At the appointed hour, 4:30 p. m., the editor appeared and addressed the association. The transactions as reported in the Illinois State Register, presumably by the secretary of the association, gives the following account of the editor's remarks and some replies made by the members of the association:

DR. KREIDER CRITISES OSTEOPATHS.

Dr. Kreider touched upon a number of the fundamental theories and practices upheld by the osteopaths, which he considered false and bad, and which he thought should bar them from receiving any great recognition by the state legislature. Dr. Kreider, however, stated that he thought osteopathy should be treated fairly by the legislature and that they should be given every opportunity to show why their demands should be complied with.

A general discussion followed the talk by Dr. Kreider, among those participating being Dr. William Smith, of the Kirksville School of Osteopathy, at Kirksville, Mo., and Dr. A. P. Kottler, of Chicago, secretary and treasurer of the Osteopathic Association of Illinois.

Dr. Kottler, in answer to Dr. Kreider's remarks, stated that all the members of the association wanted was a square deal by the Illinois State Medical Society and the state legislature so that they could practice those things that they were qualified to do. He asked for harmony between the two organizations. He spoke in part as follows: "Let us come to some agreement so that we can understand each other. We are willing to do that, but we are not willing to be measured by any yard-

stick by the other side. We would be more than glad to explain our methods so that the medical men may see us in our true light. I am in favor of seeing the medical men of the state in attendance at our meetings and wish to have them witness our work. I would also like to see them let us treat such cases as have been baffling to them. By this means we will be able to show them where we stand in the treatment of patients. In our association we can show as good a per cent. of well-educated men as the Illinois Medical Society can."

Dr. Smith, of Kirksville, talked along the same lines and explained what the schools of osteopathy are doing. The editor was invited to attend the banquet in the evening, but was obliged to decline the courtesy. The meeting closed Thursday with an evening address by Dr. William Smith. The total attendance at this lecture, according to the Register, was 150, about one-third being osteopaths. From all this it is evident that osteopathy, while still a force to be reckoned with, is fast waning in numbers. This we imagine is not through any opposition of the medical profession, but from the weakness of the cult itself. From all sides we hear reports that osteopathic practitioners are becoming dissatisfied with the position in which they find themselves placed. They are either obliged to stultify themselves and practice what they are not authorized to do, or go out of business entirely. On the other hand a new division of the sect known as Chiropractics are coming forward, claiming to be the only genuine exponents of this peculiar method of treatment. The more intelligent members of the osteopathic organization are taking courses in regular schools of medicine, and fitting themselves for efficient service, and they should be given every encouragement in this action. The legislative committee elected at this session is composed of: Fryette, of Chicago; Browne, of Dixon, and Gage, of Chicago. It was announced that 32 members of the convention had subscribed $1,640, to be used as a legislative campaign fund.

In view of recent developments in the use of money at the last session of the Legislature it is a question whether it is lawful for an organization to raise money for this purpose.

To complete the history of this incident, it is necessary to note that the *de facto* secretary of the State Board of Health is said to have used considerable state postage in sending out marked copies of the *Register*, containing the account of the editor's visit as above related.

POLITICS ELIMINATED FROM THE STATE CHARITABLE INSTITUTIONS.

The year of our Lord, 1910, may be called a minor campaign year, and these minor campaign years in Illinois for the past decade or more have been characterized by disgraceful charges and counter charges regarding the management of the State Charitable Institutions. So flagrant had the political mismanagement of these institutions become, that the last general assembly finally passed, with alacrity, a bill provid-

ing for a central board of control and ostensibly took the State Institutions out of politics.

Although this status has only been in force a few months, the result has been all that could be wished, and very little, if anything, is heard concerning the State Institutions. They seem to be fulfilling their legitimate functions and the peace of citizens having relatives therein has not been disturbed by charges of brutalities or neglect.

One of the institutions most mentioned in the press was the School for Feeble Minded, at Lincoln. Recently there convened at Lincoln the American Association for the Study of the Feeble-Minded, and at the close of the meeting the following resolution was passed:

"The Association wishes to express its gratification over the marked improvement in the conditions characterizing the School for the Feeble-Minded during the administration of Dr. Hardt, by which it has again risen to the ranks of the very best in this country."

This we have reason to believe was not a mere complimentary expression to the institution but an honest statement of actual facts. All medical men will rejoice in the condition of affairs now to be found at Lincoln and honestly pray for the time when all medical organizations of the state shall be taken out of politics and developed along legitimate scientific lines to their utmost efficiency.

IDEALS OF THE MEDICAL PROFESSION.

President Abraham W. Harris, in a recent address to the Alumni of the Northwestern University, spoke upon this subject in part, in the following forcible manner: "'Holdups' in the medical profession were declared fit to be shot. He who would be first should be a servant of all. The service of the doctor belongs to the public, and the true physician of character acts toward the public just as a public servant to the community." "In the same way a word of condemnation is needed for medical schools which are run for money. We must have a large enough endowment to support the best medical schools and the others have no place with us. We must do something to rid the public of the wofully untrained doctors who are foisted upon us."

PREPARE FOR TETANUS INFECTIONS.

Notwithstanding the widespread movement to abolish the use of dangerous fireworks on the national holiday, it seems probable that precautions against tetanus will be necessary again this year.

We would, therefore, advise our members doing minor surgery, to lay in a supply of tetanus antitoxin. It should be used promptly as soon as a wound of this character is called to their attention, and thus avoid many deaths which would be otherwise inevitable.

ILLINOIS CIVIL SERVICE COMMISSION.

Examinations will be held Thursday, July 7, in Chicago, Elgin, Kankakee, Watertown, Springfield, Lincoln, Peoria, Jacksonville, Quincy, Golconda, Marion, Anna, Harrisburg, Cairo, Mt. Vernon, Vandalia and Belleville, for the following positions:

Assistant Physician in Hospitals for the Insane and Lincoln State School and Colony. Open to men between 25 and 40, and women between 25 and 50. Scope and weights: Nervous and Mental Diseases, 2; Surgery, 2; Medicine, 2; Pathology, 1; Experience, 3.

Physician in other institutions than the insane. Open to men and women between 25 and 50. Surgery, 3; Medicine, 3; Experience, 4.

All applications must be on file in the office of the Commission by 5 o'clock, July 1, 1910.

JOSEPH C. MASON, *Chief Examiner.*

Springfield, Ill., May 26, 1910.

Correspondence.

THE LYDSTON RESOLUTION.

To the Editor:—My attention has been called to the publication in medical journals and newspapers, and circulars spread broadcast, that certain resolutions presented to the House of Delegates of the Illinois State Medical Society, by Dr. G. F. Lydston, had been adopted by said house.

By referring to the official record of said house, which will be published in July number of THE JOURNAL, you will see that said resolutions were *not* adopted by the Illinois State Medical Society.

E. W. WEIS, M.D., *Secretary.*

COUNTY SECRETARIES, ATTENTION!

To the Editor:—I am making a collective investigation of the reporting of births in this state, and would like to ask the secretaries of the county societies, through the JOURNAL, for information on the following points: 1. Is a fee paid by the county clerk for birth reports? 2. What proportion of births in the county is reported? 3. Has any attempt been made to enforce complete returns of births? 4. If complete returns are not made, what is the reason? 5. What proportion of deaths are reported? 6. If proportion of deaths reported is greater than of births, why is it?

HENRY GARNSEY OHLS, M.D.

COUNTY AND DISTRICT SOCIETIES.

ALEXANDER COUNTY.

The regular monthly meeting of the Alexander County Medical Society was held Thursday night, April 21, in the Commercial Club rooms in Cairo, the president, Dr. S. B. Cary, presiding. A majority of the physicians of Alexander county were present and a number of interesting clinical cases were discussed. The lecture of the evening was given by Dr. Samuel Dodds, the subject being "Insanity." Owing to the lack of time the subject was not completed and will be continued at a future meeting. After the discussion of the lecture by those present a luncheon was served.

DR. JAMES W. DUNN, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, May 4, 1910.

At the regular meeting of the Chicago Medical Society, held May 4, the program consisted in a Symposium on Heredity. The following papers were read: "Heredity in Syphilis," Joseph Zeisler. Discussion opened by David Lieberthal. "Influence of Heredity in Tuberculosis," Herman J. Achard. Discussion opened by Edward H. Ochsner.

Regular Meeting, May 11, 1910.

At the regular meeting of the Chicago Medical Society, held May 11, the program consisted in a Symposium on Cancer. The following papers were read: "Hyperplasia and Carcinoma and Sarcoma of the Thyroid in the Salmonoid Variety of Fishes" (by invitation), Harvey R. Gaylord, Buffalo, N. Y. Discussion opened by E. R. Le Count and W. A. Guild (by invitation), Des Moines, Iowa. "Demonstration: Specimens of Cancer." C. C. O'Byrne.

No meeting May 18 on account of the annual meeting of the Illinois State Medical Society at Danville.

Regular Meeting, May 25, 1910.

At the regular meeting of the Chicago Medical Society, held May 25, the following papers were read: "The Pharmaceutical Aspects of the New Pharmacopeia" (by invitation), W. A. Puckner. "The Medical Aspects of the New Pharmacopeia," N. S. Davis. Discussion opened by members of the new Revision Committee. G. M. Whittaker, in charge of Market Milk Investigations, Dairy Division, Bureau of Animal Industry, U. S. Department of Agriculture (by invitation), gave an illustrated talk on "Certified Milk." J. W. Van Derslice, secretary of the Chicago Medical Society Milk Commission, read a report on the work of the commission.

We have not received reports of discussions at recent meetings of the society.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting of the Chicago Laryngological and Otological Society was held March 22, 1910, with the president, Dr. Geo. E. Shambaugh, in the chair.

EXHIBITION OF APPARATUS FOR IMPROVED ETHER ANESTHESIA.

Dr. Edwin Pynchon exhibited an improved vaporizing device for ether anesthesia, on the principle of the Junker inhaler.

DISCUSSION

Dr. T. W. Brophy:—The question of administering anesthetics by vaporizing the agent is not new. Dr. Brophy began several years ago to use Yonker's inhaler, which consists of a single bottle. On one occasion the anesthetist succeeded in carrying some liquid into the pharynx of the patient which caused considerable trouble. After this Dr. Brophy had constructed a second bottle so as to prevent the carrying of fluid into the pharynx. Dr. Pynchon's apparatus is an improvement on this one. Such an apparatus is especially valuable for all work within the mouth and nose. It reduces to a greater certainty the mixing of the air with the vapor. It is especially desirable with chloroform. He believes an apparatus of this sort will be employed by general surgeons for keeping a patient under an anesthetic. The administering of an anesthetic by an inexperienced hand is not so dangerous when an apparatus of this kind is used. He believes that the fatalities from chloroform are to be blamed on the anesthetist rather than to the agent. He approves of Dr. Pynchon's method of first putting the patient under an anesthetic by means of a mask and holding him under the anesthesia by the small vaporizing apparatus. He prefers the foot piece for obtaining air pressure, as this leaves the hand free for other use. An apparatus of this kind has also the advantage of being much more economical.

He referred to an apparatus recently described containing three bottles of the same size; one for chloroform, one for ether, and the other empty. In this way by means of cock stops it is possible to change at once from ether to chloroform.

Dr. Pynchon (closing)—Dr. Brophy's experience in producing anesthesia by vaporizing justifies his speaking with considerable authority. It seems to Dr. Pynchon that the vaporizing apparatus would be ideal for administering rectal anesthesia. The only change necessary is to have the tube made longer and several coils placed in a dish containing hot water.

TWO CASES OF LABYRINTHINE DISEASE FOLLOWING CHRONIC SUPPURATION (CHOLESTEATOMA).

Norval H. Pierce, M.D., reported two cases as follows: Case 1.—A man, aged 47 years, with discharging left ear for 40 years. Ten days before admission had an attack of vertigo which confined him to bed for three days. Vertigo was still present on admission; no apparent ataxia. Examination showed severe deafness; possibly total deafness in the left ear with granulations over the promontory and pus from the attic. The hearing in the right ear was somewhat reduced and the drum membrane was retracted. Weber lateralized to the left; spontaneous horizontal nystagmus to the right and rotatory to the left. Rotation to right increased nystagmus to the left; rotation to left, severe nystagmus to the right. The caloric reaction present on the right and reduced on the left.

On December 8 a radical mastoid operation, but labyrinth was not opened because of profuse hemorrhage and bad condition of patient. Cholesteatoma in antrum; no fistula found. December 11, condition good; no spontaneous nystagmus. February 16, spontaneous rotatory nystagmus to the left, none to the right. Rotation to the right, head turned 90 degrees, increased nystagmus to left. February 17, vertigo, vomiting, slight delirium, temperature 100 F., pulse 64, eyes turned to right. February 18, spontaneous horizontal nystagmus to right; spontaneous rotatory nystagmus to left. Patient falls to the left. Has difficulty in passing finger of left hand to tip of nose; mentally sluggish. Bilateral choked disks. Irrigation of left ear did not influence nystagmus. February 20, labyrinth operation. Labyrinth filled with pus. Exploration of cerebellum by incisions; no abscess found. Patient died the next day. Postmortem showed cerebellar abscess cavity which does not communicate directly with the surface in contact with the petrous bone.

Case 2.—Man, aged 21 years; examined Jan. 12, 1910. Left ear discharging for 15 years. Totally deaf. In the right ear whisper heard 18 feet. Weber to the right. Discharge fetid from the left. No ataxia. No vertigo. Spontaneous nystagmus to the right. Rotation to the right; very slight nystagmus to left. Rotation to left, nystagmus to the right lasing 30 seconds. No fistula symptoms.

January 15, radical mastoid; cholesteatoma. February 16, some spontaneous rotatory nystagmus both directions. Nystagmus increased after turning in both directions. Diagnosis of a serous circumscribed labyrinthitis as a consequence of chronic cholesteatoma of the left ear. Spontaneous nystagmus to the right is explained by the functional activity of the left labyrinth. After the operation the static function of the left labyrinth apparently returned to the normal.

DISCUSSION.

Dr. Fletcher:—It is difficult to follow the history of the first case. I should judge, however, that there was a fistula in the oval window, as that is the case quite often when they are not found in operation. The circumscribed labyrinthitis becomes diffuse as is shown by the nystagmus shifting to the sound side. It seems to me that that history points very distinctly to brain abscess, cerebellar abscess. There can be a large area of good tissue between the point of entry and the abscess. The section may show it, and it may show a so-called multiple abscess which might be easily overlooked before the section is complete. These abscesses are frequently small and connected by tiny canals. The reason I take this case to be cerebellar abscess is because the patient first had nystagmus to the well side, then more than five days after the operation he developed nystagmus to the sick side.

If recurrence toward the sick side takes place within four days after the operation it may be put down as meningitis. If it is more than four days it is almost invariably cerebellar abscess. I know no cases and have heard of none which die from labyrinthitis only, even though it is suppurative rather than the serous variety.

In regard to the second case, I should diagnose that as perilabyrinthitis, suppuration of the pneumatic cells surrounding the bony labyrinth. These cases do get well spontaneously. They are always associated with mastoiditis, but there can be an acute exacerbation of a chronic case of suppurative otitis media which will lead to it. Granulations may be found which interfere with drainage through the antrum. However, cases of serous labyrinthitis are often associated with fistula, that is to say circumscribed labyrinthitis frequently becomes diffuse serous labyrinthitis. The hearing returns, but the patient continues to have his attacks of vertigo. Fistula was not found and the small al fork was heard. These two points speak against circumscribed and diffuse suppurative labyrinthitis and point to perilabyrinthitis.

DISCUSSION.

Dr. A. H. Andrews does not see how the rotation of the case reported by Dr. Pierce could in any way be held responsible for the development of the fatal complication. He has seen a case with somewhat similar symptoms, attacks or vertigo, total deafness in the affected ear. The case was operated on and later the labyrinth was cleaned out. Although the patient regained consciousness he subsequently died. There were no rotation experiments made here. In both of these cases he is of the impression that we have to do with a well recognized pathologic process extending from the labyrinth into the brain.

Dr. Stubbs:—Dr. Pierce's second case reminds me of a case I had about a year ago, and it might be worth mentioning for this reason, that immediately following the waking up from the operation the patient had intense vertigo and nystagmus, both rotary and horizontal. He was a young lad about 18 years old, who for 10 or 11 years had a running ear, and just before leaving England he consulted a doctor for headache. The doctor gave him some medicine, and told him it was neuralgia. The headache continued to localize towards the mastoid process, and he arrived at Chicago one week after arriving in New York with a swollen mastoid very similar to the appearance you see in an infant. I saw him the next day and told him it would be necessary to operate for cholesteatoma. The history showed nothing more than a slight tenderness over the mastoid, with a discharging ear and the headache was more of a neuralgic character. On operating I found one of the most extensive cholesteatoma I have ever seen. The labyrinth projected high up into the field of operation, and the other parts of the bone had been

excavated. I could find no evidence that the process had invaded the inner ear, and treated it as an oridnary case; but as I say, the patient on awakening had this intense vertigo and nystagmus. The relatives thought he was going crazy on account of the intense nystagmus. I left the city that afternoon for three days. On the third day, after removing the packing, within a few hours the nystagmus and vertigo had all disappeared. From that time on he made an uneventful recovery. I feel like mentioning the case on account of the symptoms which were removed by relieving the packing. Whether that was perilabyrinthitis or whether the pressure of the packing caused the increased labyrinthine pressure it is hard to say, but not seeing the case for three days, I was relieved of a great deal of worry, and was led to conclude that one can safely avoid worrying about these cases following an operation if the temperature remains normal and no other symptoms indicate severe sepsis. At least first readjust the dressing.

Dr. Holinger:—Those who have visited the clinics in Vienna will remember that nearly every week one can witness labyrinth operations. There is either more material in Vienna or we cannot make the diagnosis. I think that in a city like Chicago, with its large contributary area, we might have pretty nearly as many cases as they have in Vienna if we wanted to stretch a point. I do not think, however, that it would be an advantage to our patients. I am of the opinion that any number of cases of suppuration of the labyrinth do better if we just clean the middle ear by complete radical operation than if we break down old cofferdams of granulations which have been formed in the labyrinth against the progress of the suppuration towards the central organs, meninges and cerebellum.

As to the first case of Dr. Pierce's, I read carefully the book of Dr. Neumann on cerebellar abscess, and I would be much mistaken if Dr. Pierce did not find out eventually that this was a case of cerebellar abscess. The patient still had nystagmus after the labyrinth was entirely invaded, and this is just the point that Neumann gives as a criterion for his cerebellar abscess. I believe that Dr. Pierce made allusion to it himself by saying that the pathologist found softened areas in the cerebellum. What should that patient have died from? He did not die from labyrinthitis nor from meningitis. Did he have sinus thrombosis? There were no symptoms of sepsis. The presence of a cerebellar abscess would also explain the sudden turn for the worse in the history that Dr. Pierce gave us. It would mark the perforation of the abscess into the ventricles. I beg to differ with Dr. Andrews, that the turning was not material, because if the pus in the cerebellum was under certain pressure and the abscess walls were thin the movements of the head in turning, may have been quite sufficient to rupture the walls of the abscess towards the ventricles, and then it was the sudden invasion of the pus into the ventricles that caused the fatal issue.

Dr. S. A. Friedberg:—Regarding indications for operation on these cases of labyrinth involvement he referred to a case he had observed last year. The patient had been ill about three weeks with tenderness over the mastoid and acute pain. An incision of the drum membrane was made but no pus escaped. There was pronounced nystagmus towards the affected side, rigidity and tenderness of the neck. A rough test showed a marked diminution of hearing. The patient made an uneventful recovery with no further interference.

Dr. Geo. E. Shambaugh:—It is not easy to follow the report as presented. The statement was made regarding the first case that when first seen there was severe deafness in the left ear but that it did respond to caloric tests. It would seem that it might have presented at that time a condition of a circumscribed infection of the labyrinth instead of a condition of diffuse serous labyrinthitis, as suggested by Dr. Pierce.

Dr. Shambaugh:—I would ask Dr. Pierce whether the tests for fistula were made?

Dr. Pierce:—We noted no fistula symptoms. At the time of the operation no fistula could be found.

Dr. Shambaugh:—The failure to detect a fistula does not exclude the possibility of one being present. It would seem to me that in view of the fact that

caloric reaction was obtained before the first operation that the opening of the labyrinth was not indicated at that time. It would be contraindicated as much in case the diagnosis was one of diffuse serous labyrinthitis as suggested by Dr. Pierce, as if it was one of circumscribed labyrinth infection. The response to caloric tests would seem to exclude a diffuse suppuration of the labyrinth. The case evidently did become one of diffuse suppuration of the labyrinth. The symptoms before the last operation points to a cerebellar complication as the cause of death. A circumscribed labyrinthitis is not likely to lead to cerebellar complications. These follow diffuse suppuration of the labyrinth. The return of spontaneous nystagmus to the affected side after having disappeared from that side also indicates cerebellar complication.

I have operated on a few of these cases of diffuse suppuration of the labyrinth and all of them have made good recoveries. In one case operated on several years ago pus continued to discharge from the region when the cochlea was opened. About a year later the patient developed well marked nystagmus to the affected side. The opposite ear was normal. This spontaneous nystagmus to the affected side was not influenced by caloric tests. The patient was totally deaf in that ear. There were symptoms of disturbed equilibrium and general nervous symptoms, with severe headache, which pointed to a cerebellar complication. There was very slight rise of temperature and the pulse was somewhat slowed. An operation was done exposing the cerebellar cavity in front of the lateral sinus and working as far forward as possible. No evidence of pus was found, although the cerebelum was freely incised. This patient made a good recovery. Possibly this was a case of circumscribed encephalitis.

I have operated on several other cases for diffuse suppuration of the labyrinth, coming on acutely with symptoms of fever and severe headache, where I felt that the free opening of the labyrinth might prevent cerebellar complication; all have made good recoveries. All of my cases were secondary to erosion into the labyrinth caused by cholesteatoma. The last case operated was complicated by a severe hemorrhage from the bulb of the jugular brought on by wiping out the tympanum after the operation had been completed. It was evidently a case where the bulb encroached on the floor of the tympanum. The hemorrhage was controlled by pressure, and the case made a good recovery.

Dr. Hermann Stolte inquired of Dr. Pierce whether in the last stages the patient was not boring his head into the pillow?

Dr. Pierce:—No.

Dr. Stolte:—Did he present any symptom of locomotor ataxia?

Dr. Pierce:—After the explosion, as one might call it, the patient was unable to get out of bed. The reflexes were about normal.

Dr. Stolte:—Were any experiments made testing the ability of the patient to touch a certain point?

Dr. Pierce:—In my report I stated he was rather uncertain in putting the left finger to his nose.

Dr. Stolte is of the impression that the turning must have had something to do with the fatal termination since the symptoms developed immediately after this was done.

In closing the discussion Dr. Pierce said:—I have very little to add. I should certainly, I believe, have opened into the labyrinth at the first operation if the patient's condition had warranted it, and if there had not been such a profuse hemorrhage. I would have done that because of the very recent attack of vertigo, notwithstanding the fact that the static apparatus on that side still reacted slightly to stimulation. However, as to the fistula, I believe that if it existed at all it was around the stapes, but there was no reaction as a result of pressure or the rarefaction test. If the gentlemen had been present at the operation and seen how thoroughly I explored that cerebellum they would have felt that there was no free pus in the cerebellum, and the autopsy showed that there was no free pus in the cerebellum. Dr. LeCamp says that there may be encephalitis, but he is not

sure. It would be in the first stages. He told me that he did not know what the man died of. The sinuses we all explored and found healthy.

I think that Dr. Stubbs' case was one in which he simply packed the gauze tightly against the stapes. I have had a similar experience. The moment the pressure is removed, the vertigo and discomfort cease.

With regard to the second case being called perilabyrinthitis, I should say that that is hardly in accord with the fact that the hearing was totally destroyed. I think it is quite possible that the rotation before his last symptoms became apparent may have had something to do with it. I hope sincerely that it had not, but it is something we must bear in mind. I have had a similar experience as that quoted by Dr. Holinger from Alexander. In a case of temporosphenoidal abscess the pus did not flow although the knife passed directly into the abscess.

Dr. Herman Stolte read an exhaustive paper on the "New International Accumetric Formulæ," and their increased value by adding in complicated cases a diagrammatic picture of the quantitative hearing, especially with reference to a classification of the different kinds of nerve deafness.

DISCUSSION.

Dr. J. Holinger:—Mr. President: Dr. Stolte has once before spoken on tuning-fork tests, and then, as to-day, has left the meeting as soon as he had finished. A discussion and a weighing of the pros and cons was therefore impossible. To-day, however, I cannot let some of his assertions pass. Dr. Stolte has undoubtedly given much time and patience to his investigations, but what is the positive gain as compared with Bezold's tests. Everybody knows that in these fine tests for fields of hearing we depend considerably on the attention and feeling of the patient. Therefore we have to repeat them several times before we can rely on them. This takes many hours. What busy man can afford to give that much time to each patient? And in the large free clinic these examinations, as Dr. Stolte says the international committee on hearing tests requests us to make, are practical impossibilities. Now maybe the conclusions that can be drawn from these examinations repay us for the loss of time. Dr. Stolte says this (pointing at a chart) is probably a case of increased labyrinthine pressure. Professor Bezold has shown by manometric experiments on the cadaver more than twenty years ago that the pressure in the labyrinthine fluid cannot be increased for any length of time, because an equilibrium is at once brought about through the aquaducts. Increased labyrinthine pressure has been found in deaf-mutes, where the aquaducts were closed; but the field of hearing which Dr. Stolte pointed out does not belong to a deaf-mute. I do not know whether it helps to increase our confidence in his ascertions if we see that he even ignores the few facts that have actually been proven by experiment. Altogether I fail to see in Dr. Stolte's paper any reference to or consideration of the newer pathology of the ear. All are clinical data which dangle in the air. Does this warrant the loss of time?

It seems to me, furthermore, that Dr. Stolte complicates matters unnecessarily by substituting absolute numbers for hearing by air and by bone conduction instead of making *Rinné's test.* The hearing by bone conduction improves as compared to hearing by air conduction in all diseases of the sound conducting apparatus. Rinné's test gives us a comparison of the two, free from all accidentals. In trying to measure absolutely the hearing by air and by bone conduction, we are subject to accidentals, namely, the stronger or weaker initial irritation of our tuning fork. Furthermore, Dr. Stolte makes two tests out of one. Finally we have to compare numbers in order to get the result while in the regular technic of the Rinné test we get the result at once. It is one of the wonderful diagnostic advantages of Rinné's test that in diseases of the sound perceiving apparatus Rinné's test is not altered because hearing by bone conduction and by air conduction are both proportionately lowered. Finally Dr. Stolte mentions against Rinné's test that we must not compare the vibrations of the prongs with those of the handle of the tuning fork. The answer is this, that we compare only the length of time of perception of vibrations. The handle vibrates exactly as long as the prongs do, which can be mathematically and mechanically proven.

Gentlemen:—Personally, I thank Dr. Stolte for giving me an insight into the work of this committee but I am not thereby convinced as to the advisability of changing the present method of making hearing tests. We make functional tests in order to get a diagnosis. A diagnosis must include and represent a pathologic entity, and with it a prognosis. This I obtain completely and accurately in twenty minutes by means of Bezold's tests which are supported by ample pathologic investigation. The tests which this committee expects us to make take hours, and as I have tried to show, give us only clinical facts, not supported by pathology, nothing except a present status which may change in a few days as Dr. Stlote himself has proved in one of his cases. (I refer to the case of suppuration of the middle ear where Dr. Stolte ascertained the field of hearing. He removed a few granulations from the middle ear and the field of hearing changed. Later on the patient acquired typhoid fever, the field of hearing changed again and finally it changed again, after the patient had passed a few weeks in the country.)

Regular Meeting, April 19, 1910.

A regular meeting was held April 19, 1910, with the president, Dr. George E. Shambaugh, in the chair. Dr. L. W. Dean, Iowa City, read a paper on "Severe Sepsis Following Tonsil Operations."

DISCUSSION.

Dr. W. L. Ballenger:—We ought to feel indebted to Dr. Dean for so frankly reporting experiences of an adverse nature. I recall only two cases of very severe local infection following tonsillectomy, and one following tonsillotomy. Adults are more prone to have these infections than children, and tonsillectomy is no more apt to be followed by infection than tonsillotomy. The first case was a man, aged 35 years, who had a very severe streptococcus infection. He was in bed for about two weeks. He recovered rapidly. The second case was one in which I saw the most severe and disastrous sequelæ that I ever encountered. The patient had had his tonsils removed because of a very severe laryngitis occasioned by a considerable use of the voice. The throat was not objectively sore, but there were subjective symptoms. He evidently had a follicular tonsillitis. I dissected the tonsils out with a knife and he developed a most virulent infection. The muscles of the neck were stiff and it was some months before he recovered sufficiently to return to his work. The operation was similar to that I had done in hundreds of patients before and have done since, and teaches the lesson that we should not operate in the presence of acute infections, except in such cases as Dr. Dean mentioned. Usually we do not expect complications in tonsil work, but perhaps we have been loath to confess such occurrences as Dr. Dean reported. I have had numbers of cases of mild infections, but nothing more serious than those I mentioned. I have had otitis media following tonsil operations.

Dr. J. Holinger:—Few of us realized that sepsis plays such a great rôle amongst the dangers of tonsillotomy, therefore the paper of Dr. Dean is important. It is true that I saw a young man die who was brought to Alexian Brothers Hospital in a septic condition after a tonsillotomy elsewhere, but except in very rare cases we looked upon hemorrhage as the only danger of this operation.

I think that two cases which Dr. Dean reported might show a somewhat different aspect in the light of the fact that the tonsils and the lymph-glands of the neck are secondary organs which obtain their lymph from the nose and nasopharynx. The nose therefore must always be carefully watched. In one case Dr. Dean tries to explain the symptoms by ascribing them to a thrombophlebitis which progressed backwards from the jugular vein to the inferior petrosal sinus, the cavernous sinus, the posterior intercavernous sinus, and both superior ophthalmic veins, in other words of all the venous sinuses of the base of the brain, and the patient recovered. I do not remember of having seen or heard or read of a case of recovery after such extensive affection of the sinuses, and therefore would ask Dr. Dean whether another explanation of his case would not be possible? He did not

mention anything about the nose. An acute inflammation of both frontal sinuses and ethmoidal labyrinth might explain the exophthalmus, loss of vision and the recovery. In another case with a large abscess of the neck after tonsillotomy Dr. Dean mentions that the lymph-glands which were seen in the external wound were not swollen. This is important. It shows that these glands do not get their lymph from their vicinity, but from the nose, and naso-pharynx and those parts evidently were normal in this case.

Dr. A. M. Corwin:—This is a very interesting question, which the reader of the paper has brought up again. Personally, out of a large number of tonsils operated on by one method or another, I have never yet had a case of severe sepsis following the operation. But one feels like touching wood when he makes such a statement, for he realizes that any of us may have such a complication no matter what the technique. I do not agree with Dr. Holinger, when he minimizes the part which the bacteriology of the tonsil plays in the case. We know too little about the bacteriology of the ordinary non-inflamed tonsil. Considerable has been written about the bacteria in acute cases, but in the ordinary case of hypertrophy that comes for operation, how much do we know or seem to care about what pathogenic germs may be present in the tonsillar crypts. The endemic cases of membranous and lacunar tonsillitis referred to as occuring in one family suggest something like diphtheria. It seems reasonable that all cases of secondary involvement of the tonsils and tissues underneath should be examined critically from a bacteriologic standpoint. I have no doubt, however, that apart from the kind and the virulence of infection, the question of individual resistance and technic must play considerable part in the small number of septic instances that come in a very large number of patients operated on. We can easily imagine that a case in which muscular tissue is extensively injured in the operation is more open to infection than one in which the capsule alone is involved. Just what number of cases of infection would show such trauma of muscular tissue, we can not tell. It would be interesting to know but it is a hard thing to get at. We take out these tonsils and it is next to impossible to tell in a radical resection how much muscular trauma has been done. As to the relation of nasal suppuration and sepsis following tonsillectomy, it would be difficult, I believe, to show that there was sinus involvement or nasal trouble out of the ordinary to account for the septic sequelæ. I cannot follow Dr. Holinger in his argument. The after-treatment of the wound is of importance in preventing infection. I feel more easy after the use of nitrate of silver, forty to sixty grains to the ounce, swabbed into the wound thoroughly. This closes up the lymphatics. I also use equal parts by bulk of carbolic acid and camphor. Whether the applications immediately following the operation have lessened the amount of after-effect in my patients, I do not know, but it seems reasonable that a good strong local treatment of that sort must be effective.

Dr. P. J. H. Farrell:—In my case, which Dr. Ballenger cited, I did not have an acute inflammation of the tonsils. A month before Dr. Ballenger operated, I had a laryngitis and hoarseness, no pain, and while I had no inflammation of the tonsils, they had, since childhood, been hypertrophied. I thought that perhaps the large tonsils had a tendency to produce occasional hoarseness after straining my voice to reach a large audience.

I had a streptococcus infection which ran a severe course for several months after the operation, and the torticollis which followed has now, after three and a half years, almost disappeared. There is still some pain and stiffness when turning my head to the left. I must correct the impression that any physician had refused to operate on my tonsils because of an acute inflammation or for any other reason.

We should be very careful in doing tonsillectomies. I use iodin, Dugol's solution, in every case, swabbing the tonsil bed thoroughly. I have done a large number of tonsil operations, but have never had an infection. The after treatment is very important. In my cases, we used a mild alkaline gargle immediately after the operation.

About six years ago, Dr. Freer did a submucous operation on my septum, and my voice had given me no trouble thereafter until the hoarseness that appeared a month previous to my tonsillectomy, and this, only after I had made many public

speeches in the preceding month. The atrophy following the tonsillectomy, has made me more susceptible to hoarseness after public speaking than at any time previous to the operation. I have had several acute and painful attacks of laryngitis and pharyngitis which were unknown to me previous to the operation. Personally I am no longer doing complete tonsillectomies. Tonsillitis can be relieved and cured, and an atrophic throat cannot be relieved and is incurable.

Dr. O. T. Freer:—The occurrence or absence of septic complications after tonsillectomy depends, in my opinion, almost entirely on the method of operation, unless in the case of the removal of acutely inflamed tonsils. Those operative modes whose principle is the tearing out of the tonsil wholly or in part with blunt implements, such as the finger, dull separator and the wire snare, not only devitalize the tissues by bruising and rending them, but cause the dormant chronic peritonsillar inflammation, so frequently present about diseased tonsils, to become violent and acute, while the sloughs and half dead tissue, left by these evulsive methods, form an excellent culture medium for pathogenic germs. To show the evil effects of such rough surgery I mention as examples two cases. One of the patients was a robust boy of twelve whom I saw in consultation with a colleague. He died of ulcerative endocarditis resulting from septic absorption due to a gangrenous condition of the soft palate and pillars of the fauces created by an enucleation and snaring operation, which tore the tonsil from its bed and with it a large part of the soft palate and the posterior palatine arch. The second patient died of pyemia following the same type of operation, and in numerous other cases seen by me, where the consequences were less serious, marked inflammation, fever and sloughing followed the tearing out of the tonsils by this method.

It is not to be denied that blunt evulsion and the snare will often take out the tonsils without much or any damage, and the reason for the harmlessness of this procedure at one time and the injury it does at another, is principally the absence or presence of cicatricial adherence of the tonsil to its surroundings, this adherence being the result of chronic peritonsillitis or repeated attacks of peritonsillar abscess.

Chronic peritonsillitis is a very common affection and much more important than seems to be generally understood. It results from frequent attacks of acute tonsillitis, or more often from chronic tonsillitis maintained by bad drainage or crypts, which suppurate or are filled with decomposing epithelium. In these conditions the chronic inflammation about the tonsil cicatricially joins it to the tonsillar fossa and the pillars, matting the parts together, so that the so-called capsule of the tonsil, seldom a very definite structure, becomes firmly united to its surroundings, blending with them. The persistent soreness about the tonsils, and pain in swallowing and speaking, so characteristic of chronically diseased tonsils, is due to this constant low grade of peritonsillar inflammation, which causes motions of the muscles of the palate and pharynx to be painful.

In some cases the chronic peritonsillitis is interrupted by a succession of peritonsillar abscesses, in others none occur. In some cases the peritonsillitis makes itself evident by a chronic hypertrophy of the pillars of the fauces with thickening of the mucosa surrounding the tonsil, a thickening which may even be great enough to simulate a tubercular infiltration. In most instances, however, the inflammatory process is hidden in the depths of the tonsillar fossa, and merely makes itself manifest by dysphagia and discomfort.

The result of the peritonsillar inflammation, whatever be its cause, is always a cicatricial union of the tonsil to the pillars, palate and tonsillar fossa, so that, instead of permitting itself to be shelled out readily, with its fibrous covering, the tonsil adheres to its surroundings and can only be properly liberated from them by dissection with the keen blade. Attempts to tear it out, tear out muscular tissue and portions of the palate with it, this violence leading to the septic inflammations mentioned.

Because of the injury and inflammation often caused by the evulsive methods I have abandoned them for years, and now rely entirely on knife dissection, as described by me in the *Journal of the American Medical Association* for 1909, Vol. lii, pp. 547-552. This method not only cleanly excises all tonsils, regardless

of how firmly they be adherent to the tonsillar fossa, but causes such a minimum of reaction that danger of sepsis is practically eliminated. The wire is a rude cutting implement, and, where the tissues are tough and fibrous it rends rather than cuts. Where used in combination with blunt separation of the tonsils, the wire snare represents timid surgery, which, fearing bleeding, runs the greater risk of septic inflammation and destruction of portions of the palate.

With reference to the importance of fresh air after tonsillectomy, mentioned by Dr. Holinger, it seems to me that there are always sufficient bacteria in the mouth to produce infection, if the tissues have been enough damaged to invite it, and, as in surgical operations elsewhere in the body, the best safeguard against sepsis after tonsillectomy is a minimum of traumatism and devitalization of the tissues. This is insured by the use of the knife in preference to blunt dissection, which by mechanical injury lowers the resistance and vitality of the tissues.

It seems unfair to Dr. Dean to suppose that he overlooked so formidable a disease as a double frontal sinusitis great enough to produce exophthalmos in one eye and panophthalmitis in the other. It is hard to explain the eye symptoms in his case but, to invade the orbit and create exophthalmos, the frontal sinusitis would necessarily have to be not only suppurative but suppurative with a tendency of the pus formation to extend beyond the sinus into the orbit and produce orbital abscess. The fact that no such result occurred in Dr. Dean's case speaks against frontal sinusitis.

Dr. Edwin Pynchon:—While the paper is limited to septic manifestations following tonsil operations, we all know that serious septic conditions arise following diseases of the tonsil, where there has not been any operation done. It is apparent that when sepsis occurs after tonsil operations, it must be due either to a septic condition previously present in the tonsil, or to the introduction of germs during or after the operation. The tonsil is intimately connected with the lymphatic system, and after an operation it is the easiest thing in the world for sepsis to extend from the tonsil wound into the general lymph stream, and particularly to the cervical glands. Therefore, if anything can be done which will close the openings in the tonsil wound after operation it will prevent, to a considerable degree at least, the possibility of sepsis extending from the local focus. I have for the past twenty years been doing tonsillectomies. I was convinced from the beginning that the proper thing to do is to remove the entire tonsil. I have done tonsillotomy, but the majority of my operations have been tonsillectomies. I use the cautery under local anesthesia. It is alleged that the cautery is a bad thing because it adds a burn to already existing conditions, but by its aid we accomplish the very thing I mentioned—closing up the openings which lead to the general lymph stream. I have not had any pronounced sepsis following my tonsil work. There is always bound to be a moderate degree of local sepsis after the making of a deep wound in the throat. My belief is that the best results are obtained by following out the principle of the efficacy of a small dose, frequently repeated. In other words, frequent cleansing of the wound. My custom is to have the patients gargle the throat regularly every fifteen minutes for the greater part of the first twenty-four hours. After that every half hour for a day or two. Then at least every hour. In this way I have not been annoyed by any of the serious manifestations reported by Dr. Dean.

Dr. W. L. Ballenger:—Dr. Dean hospitalizes all his patients. I hospitalize about 5 per cent. Dr. Dean keeps his patients in the hospital an extreme length of time. That is one of the dangers he is assuming. The only reason I put a patient in the hospital is because I feel that the secondary hemorrhage can be controlled more easily. The danger of infection is greater when the patient is kept in the hospital too long.

Dr. Dean (closing):—I examined the noses of my cases carefully, but found no evidence of sinusitis. I do not keep my patients in bed during the time they remain in the hospital. I keep them quiet for twenty-four hours, and then send them out of doors.

CASE OF CEREBELLAR ABSCESS.

Norval H. Pierce, M.D., Chicago.

The patient was operated on in February, 1909, and a large quantity of pus was obtained from the right cerebellum. It was a case of cholesteatoma of the right ear with involvement of the labyrinth. At the time of operation she was unconscious. A radical operation was done, the right vestibule and labyrinth were opened, but no pathologic connection being found between the labyrinth and cerebellum, an opening was made in the occipital region and the abscess was evacuated and drained. Everything went well until six months ago, when she began to have headaches. There is marked spontaneous nystagmus on looking toward either side, which practically disappears on looking straight ahead. The right labyrinth does not react to caloric tests. A further detailed report will be made later. There was complete facial paralysis before the operation, which has practically disappeared. It is probably a meningeal plastic process involving both nerves, or more probable a cyst of the cerebellum developing from the old abscess cavity, situated so close to the median line as to involve the left nucleus.

RECURRENT PAROTID ENLARGEMENT.

S. A. Friedberg, M.D., Chicago.

The condition which I wish to describe is that of a recurrent enlargement of the parotid gland, unilateral or bilateral, produced by the ingestion of certain kinds of food. An exact counterpart of the condition I have been unable to find described in any of the standard text-books or in such of the literature as I have been able to investigate. However, in speaking to some of my professional acquaintances, I have heard of two cases that have presented characteristics similar to the one which has come to my notice.

The history of the case is as follows: Female, married, aged 37 years. The condition has been present intermittently for fifteen years. Had typhoid fever in 1890; subsequent to this she had a train of functional nervous symptoms for several years but which for a number of years past have been entirely absent. The first evidence of the present condition appeared about fifteen years ago. The patient stated that she remembered having had a sensation of dislocating or locking the right side of the jaw in gaping. This caused severe pain on attempted closure of the mouth and was accompanied by the immediate swelling of the parotid gland. This sensation has accompanied the parotid enlargement frequently since that time. The attacks are usually produced by acids, mineral or vegetable and highly spiced foods. The left gland is more often swollen than the right, although at times both are simultaneously affected. The gland rapidly enlarges and one can distinctly see the increase in size. The swelling persists from one-half to two hours as a rule, although occasionally it takes twelve hours for it to subside. She is having on an average about two attacks a month. There is apparently no diminution of saliva; dryness of the mouth or throat is not present; neither is there an excess at the termination of the attack. As for the symptoms, the patient has acute pain when she eats very sour or peppery foods. The pain radiates down the jaw and under the chin and extends back of the ear. This lasts momentarily and is succeeded by the feeling of tension over the gland. At other times the pain is not severe, only the tense sensation being present accompanied by a feeling of warmth in the parotid region. Usually there is discomfort but no actual pain on mastication. Attacks are sometimes preceded by an intense external itching in the region of the glands. There appears to be no submaxillary involvement. On palpation the glands are apparently a little larger than normal, due perhaps to the constant recurrence of the swelling. There is tenderness on palpation only when they are swollen. Because of the comparative lack of severity of the trouble, Stenson's ducts were not probed.

As I stated above, I have been unable to find an exact duplicate of this case in the literature. However, I will enumerate the various conditions in which recurrent enlargement of the parotid has occurred. No account is taken here of

the various secondary inflammatory conditions of the gland following the infectious diseases or of post-operative complications.

In 1896, Raymond Johnson reported five cases of swelling of the parotid coming on during a meal. In three of these he demonstrated that an obstruction of Stenson's duct caused a retention of saliva. There was considerable pain during mastication. Several relapses occurred in one case and suppuration in another. Kussmaul (cited by Johnson) records an instance of recurring salivary tumor resulting from fibrino-purulent inflammation of Stenson's duct. In this case, a woman aged 32 years, there had been attacks of swelling of the right parotid gland recurring every 5 or 6 months over a course of two years. The swelling always occurred somewhat suddenly during meals and was attended by a feeling of discomfort but no actual pain, usually lasting half an hour and then rapidly subsiding. A year later a more severe attack occurred of longer duration, more swelling and attended with much pain, especially during meals. Swelling subsided after the escape of a few drops of thick pus from Stenson's duct. The attacks occurred more frequently, sometimes after intervals of not more than two or three weeks. During the attack, a fibrino-purulent mass could be forced out of the duct. This consisted of a fibrinous deposit containing pus and epithelial cells. Stiller, of Budapest (cited by Johnson), mentions the case of a man, aged 36 years, who had a rapidly increasing swelling of the right cheek appearing during dinner. This was the seat of warmth and discomfort but of no actual pain. It continued increasing in size up to the next day. While the patient was handling and squeezing the tumor, he spat out a shredded purulent mass whereupon the mouth filled with a pure watery fluid. The enlargement then disappeared. Subsequently the patient experienced milder attacks every 3 to 6 months, which were relieved by pressure on the gland.

A number of cases of transitory enlargement of the parotid gland due to the administration of the iodids have been recorded. When the medicine was discontinued the swelling rapidly subsided. There have also been cases reported of recurrent parotid enlargement in xerostomia or dry mouth. In one of these, that reported by Battle, the parotids increased and diminished in size over a period of two years. The glands were enlarged to about the size of a walnut and were firm and lobulated. In another case reported by Chappell, the parotid glands would enlarge and become tender. The swelling would subside in two or three days.

In cases of calculus of the submaxillary gland or of Wharton's duct we frequently have attacks of what is known as salivary colic. This also comes on during meals and is accompanied by pain or discomfort and an enlargement of the gland. These cases are due to the retention of saliva on account of the obstruction.

In my case there never has been any apparent difference in the normal amount of saliva nor have there ever been any plugs of mucus or muco-purulent material from Stenson's duct. It resembles the cases cited inasmuch as it appears during meals. It differs from them in the greater number of attacks and the longer period of time which has elapsed since the beginning of the trouble. The swelling is only temporary and on subsidence, between the attacks, we find that the gland is only slightly affected, whereas in the other cases the swelling has usually existed for a longer time and was relieved only by the removal of the obstructing material from the duct. In view of these facts I believe we have to deal with a spasmodic closure or stricture of Stenson's duct brought on by the stimulation of certain foods and subsiding gradually when the effects of this stimulation have worn off. It seems to me that if a chronic inflammatory condition were present the attacks would not subside so quickly, would occur oftener and there would be more evidence of the retention of secretion in the glands than is now present. The introduction of the probe might possibly have helped in clearing up the diagnosis, but as the patient is from out of the city, this will have to be deferred until she presents herself again.

DISCUSSION.

Dr. Norval H. Pierce:—I recall a somewhat similar case which lasted for about a year before I saw the patient, a girl aged about 16 years. There was pronounced swelling of Wharton's duct. On probing it I found a small calculus which I removed. Undoubtedly, most of these cases are inflammatory and due to calculous deposits in the larger or smaller ducts.

Dr. Friedberg (closing the discussion):—I found no description of this condition in the text-books. Johnson, in three of his cases, determined that the trouble was not due to calculus, but to an exudate in the duct, which caused temporary obstruction. The French describe a salivary colic coming on during eating, characterized by swelling of the submaxillary. On probing the duct one can find the obstructing material.

THE VALUE OF SUCTION IN THE TREATMENT OF PURULENT OTITIS.

H. Gradle, M.D., Chicago.

The past few years suction has been mentioned by various writers as an aid in the treatment of suppuration of the middle ear. But no definite proof of the value of this method has been reported to the author's knowledge. I believe it is hence worth reporting some personal observations which have shown me what suction can do. The method is very simple; suction by means of a strong rubber bulb or even the mouth through a Siegle speculum or any air-tight olive tip put into the meatus. I have used it a few minutes with each dressing and have sometimes had the patient use it also a number of times per day without disturbing the gauze tampon.

My most convincing observations regarding the efficacy of suction refer to chronic cases. I have studied for many years the various therapeutic methods by means of which chronic otitis can be cured without operation, provided there are no urgent indications. I have thus learned that without operative exposure a cure can only be obtained by the efficient draining of the discharge, after syringing—if necessary with a fine tube—has removed any accumulated inspissated pus, cholesteatomatous masses or necrotic bony spicules. The most efficient drainage I have hitherto obtained by properly inserted gauze tampons. The odor of the discharge is a good index of the drainage efficiency. My first convincing observation on the superior efficacy of suction was the following:

A boy had an ear discharge persisting about four months after measles. The ear had been well taken care of by Dr. Yudelson who then referred him to me. I found a large defect in the upper rear part of the drumhead with moderate mucopurulent discharge of offensive odor. Hearing fair. Although I had reason to believe that good care had been used in applying the gauze tampon I continued personally the same treatment daily for two weeks, meanwhile trying to dislodge any accumulated débris by means of attic irrigation. No result whatsoever was obtained as regards discharge or odor. For nearly two weeks more the boy had the treatment continued at home and as I watched him I knew it was properly carried out. Still no change. I then directed him to use suction each time before and after a fresh tampon was inserted twice a day. One week later the discharge was lessened and the odor scarcely perceptible; another week subsequently the ear was cured and has remained so for more than two years.

I have had no opportunity again to give the method such a critical test. For since that experience I have deemed it proper to use it in all cases from the beginning of treatment together with syringing, gauze drainage, etc., and cannot say with certainty how much suction contributed to the success. Still I have seen two other patients in whom treatment had been kept up for weeks by others in a manner which seemed to me thorough and in which the first decided improvement was only obtained after I added suction to the previously employed methods. Some three or four out of about fifty cases of chronic otitis presented conditions which according to my former experience made a cure by conservative methods without suction very unlikely. But that is of course not positive evidence. I also do not wish to be understood that suction can always cure.

In acute cases it has seemed to me that I obtained often a shorter course than I would have expected on the basis of past experience. But that, too, is mere impression, not evidence. The most I can say is that three patients who came to me in the second and third weeks of an acute otitis because they were dissatisfied with the slow progress, as it seemed to them, improved more rapidly subjectively and objectively when I added suction to the previous treatment which I believed had before been well carried out by their former physician.

The effect of suction is sometimes visible by the reappearance of discharge in the tympanic perforation after thorough cleansing by syringing. As we deal with cavities with rigid bony walls we cannot explain this by the pressure of the external air as would be the case in an abscess in soft parts. But except in instances of profuse discharge the middle ear attic and adjoining cells contain air as well as some morbid fluid and this confined air expands upon suction and helps

to force out the fluid if the latter is nearer to the exit than the air. There is also some effusion from the vessels upon forcible suction and indeed at times slight hemorrhage which presumably aids in dislodging pentup secretion.

DISCUSSION.

Dr. J. R. Fletcher:—I have had an experience lately which I think is unique. A man was struck over the ear and had a traumatic rupture of the anterior inferior quadrant of the right tympanum. I saw him about a week or ten days later, and found a serous exudate, but no infection. After two weeks of treatment no improvement was evident. I blew out the tube and drained with iodoform gauze, closing the external meatus with sterilized cotton. He acquired acute rhinitis which caused a sero-purulent discharge from the ear. His condition got very much worse. After four or five days I undertook suction treatment and after three treatments, covering a period of six days, draining with the iodoform gauze, the discharge ceased completely. I insufflated a small quantity of boric acid powder. After two weeks the wound in the ear drum had entirely healed.

Ruttin throws some light on the efficacy of suction in these cases. He found that the granulations on the wall of the labyrinth in chronic suppurative otitis media oftentimes form little pockets, which contain pus. These pockets do not drain spontaneously. They destroy the underlying tissue. Suction will empty these pockets. The only danger from suction would be the dislocation of partially necrosed bones. In such a case the inflammation would extend to the labyrinth.

Dr. W. L. Ballenger:—My experience with the suction treatment of otitis media corresponds with what Dr. Gradle has said. I do not attribute the immediate danger to rarefaction of air in the middle ear, but to the fact that the secretions are thinned and flow out more readily. Leucocytosis is also produced by the hyperemia which is induced and the nutrition of the tissues is improved. In other words, the tissue resistance is raised, the tendency to infection is diminished, and with increased tissue resistance the infection finally disappears and a cure follows.

I fear that these cures are more apparent than real, and we should not feel that we have cured these patients because there is liable to be a recurrence of the trouble.

One case remained cured for seven years, but the patient finally died of meningitis. It is dangerous for the physician to believe that he is curing his patients. He may cure them to the extent that he no longer sees any secretion, but I doubt that he cures them in the sense that the gross pathologic lesions could not be discovered. However, this method of treatment is valuable and very beneficial, but we must caution the family that the cure may not be as complete as it seems.

Dr. Edwin Pynchon:—Suction is undoubtedly of value. In these conditions we have the devitalized state of the mucous membrane, lining the middle ear. Suction is of benefit not only on account of removing the secretions, but it also increases the blood supply to the parts and invigorates the lining mucous membrane. I have been using suction for many years, but employ an air current somewhat different from ordinary suction. I have devised an apparatus whereby you can produce either continuous suction or what is called suction with release. If you draw too much blood to the part you may do harm, but if you use a form of suction wherein, after the exhaust, there occurs what is called a release, the treatment is much more beneficial than with the other form of suction. My apparatus is a pump which is attached to the Victor engine, and it gives four forms of air currents.

As regards the use of gauze packings in the ear, I have not been particularly pleased with that method of treatment, for the reason that if the patient is seen only once in twenty-four hours the gauze becomes so saturated with the secretions that it, to a large extent, loses its power of capillary attraction.

I have preferred the wet method of treatment. By using the douche frequently you will get much better results than by using it only once or twice a day. The frequency of use is regulated by the amount of discharge and the other symptoms present.

In case there is a bad odor or pain, my favorite douche is a one per cent. carbolic acid solution of as great a heat as the patient can stand with comfort. When there is no pain or bad smell, I use a hot one per cent. soda solution. The combination of suction and the douche treatment has given me the best results in the shortest time.

CLINTON COUNTY.

The annual meeting was held by the Clinton County Medical Society in the Court House at Carlyle, May 10, 1910. The meeting was opened by the president, Dr. B. J. Meirink, and the following members were present: Drs. A. L. Fisher, F. Fisher, Vogt, Vernon, Morony, Alsop, Gordon, Carter, J. D. DuComb, Roane, Wilcox, Klutho, and Meirink. The election of officers of the society for the ensuing year resulted as follows: President, Dr. J. G. Vogt, Trenton; vice-president, S. H. Wilcox, Shattuck; secretary, John C. Klutho, Breese; treasurer, A. L. Fisher, Hoffman. Dr. B. J. Meirink was elected a member of the board of censors to serve three years in place of Dr. Alsop, whose term expired. Dr. J. A. Bauer to serve two years and Dr. S. H. Wilcox, one year. A motion carried that the president-elect be named a permanent delegate, and so Dr. Vogt will be our delegate during his term as president of this society. Dr. A. H. Carter of Trenton was elected alternate. The controversy between the physicians and the State Board of Health was discussed by a number of the members, at the end of which our delegate was advised to make himself acquainted with the situation and to the best of his knowledge vote for the good of the people, the physicians, and of our society. It then being 12 o'clock the meeting adjourned for dinner. Meeting was resumed at 2 o'clock. Dr. W. E. Sauer of St. Louis, who was our guest, read a paper on "Chronic Suppurative Otitis Media," which proved to be very interesting and instructive and I am sure was greatly appreciated by every member present. After giving a vote of thanks to Dr. Sauer for having responded to our invitation, the society adjourned to meet again on the second Tuesday in August, 1910, at Trenton.

Dr. B. J. Meirink, President.
Dr. J. C. Klutho, Secretary.

FULTON COUNTY.

The fifty-first meeting of the Fulton County Medical Society was held in the Churchill House parlors, May 3, 1910, a 1 p. m. Minutes of previous meeting read and adopted. A letter from Dr. Robb was read stating that he could not be present on account of being out of the state. Dr. Mitchell of Carbondale presented a very interesting paper on "Legislative Injustice and Political Apathy Weakening Factors in Medical Organization." Dr. Becker of Knoxville presented an equally interesting address on "Our State's Protective Feature." Dr. Stoops presented a paper on "Benzoate of Soda as a Food Preservative." The program committee had erroneously placed Dr. Stoop's subject as salicylic acid instead of benzoate of soda. Dr. Allison presented a paper on "Active and Passive Immunity." Application for membership from Dr. V. D. Crone was read and referred to the membership committee. Those present were Dr. Mitchell of Carbondale, Dr. Becker of Knoxville, Drs. Coleman, Oren, Shallenberger, Kirby, Adams, Chapin, Standard, Allison, Harrod, Snively, Stoops, H. H. Rogers, M. T. Rogers, Ray, Parks, Simmons, Zeigler, Wm. Plummer and Miller.

At the request of the State Medicolegal Committee a canvass was taken as to the membership that were insured, with the showing that none of the Fulton county members were insured. A unanimous vote of thanks was given Drs. Mitchell and Becker for their papers. Adjourned.

D. S. Ray, Secretary.

LASALLE COUNTY.

The regular annual meeting of the LaSalle County Medical Society was held in the Good Will Church, at Streator, April 26, 1910, at 10:30 a. m. Those present were Drs. Love, Weis, Dicus, McCord, Perrisho, Wilson, Conley, Lester, Richards, Purcell, Curry, Ensign, Sexton, Burrows, Pettit, Ella Fitch Milligan, Shaw, Smith, Dorsey, Ida M. Wooley, and Schoenneshoefer. Visitors: R. T. Pettit, Dr. Potts of Tuluca and Mr. Geo. P. Mills of Evanston, and about twenty druggists from different parts of LaSalle county. Minutes of the previous meeting were read and approved. The following applications for membership were read and referred to the board of censors: W. P. Fread, Clint A. Laffoon, S. E. Parr, Ida M. Wooley, and George R. Wilson. The censors reported favorably on the above.

Amendment to Chapter III, Sec. 1, of our Constitution and By-laws was presented as follows: "If the regularly elected delegate and alternate are not present at the state meeting, then the members of the county society who are present at the meeting may elect one of their number to act as delegate." A motion to change the word "amendment" to the word "add" was offered and prevailed. This addition to Chapter III, Sec. 1, was adopted unanimously.

Communications were read from President Wiggins, president of the Illinois State Medical Society, and from Dr. Charles A. L. Reed, chairman of the committee on medical legislation of the A. M. A. A resolution as follows was presented by Dr. E. W. Weis:

WHEREAS, Senator Robert L. Owen has introduced in the Senate of the United States a bill (S. 6049) establishing a Department of Public Health, and

WHEREAS, This subject has been long under discussion by the medical profession, which discussions have been unanimously in favor of the same, it is hereby

Resolved, By the La Salle County Medical Society in annual session, that we heartily endorse the above mentioned bill and urgently and insistently request our representatives in the Senate and in the House of Representatives to use every endeavor in their power to secure the passage of this bill into a law. Be it further

Resolved, That a copy of these resolutions be immediately transmitted by the secretary to Senators Shelby M. Cullom and William Lorimer and to Representative Charles E. Fuller.

A free discussion followed after which it was unanimously adopted, ordered spread on the record and copy sent to our senators and representative. It having been announced that Dr. P. M. Burke of LaSalle, could not be present at the state meeting as an alternate delegate, it was suggested that a successor be elected. Carried. A verbal report of the work done by the medicolegal committeeman was presented by Dr. E. W. Weis. At this point an invitation by the Streator Medical Club for dinner was accepted. The chairman announced the following as a nominating committee: Ensign, Dicus and McCord. Meeting adjourned to 1:30 p. m.

On reconvening, the report of the auditing committee was read and approved. The report of the nominating committee is as follows and was unanimously adopted: For president, Dr. D. S. Conley, Streator; for vice-president, Dr. E. H. Butterfield, Ottawa; for secretary-treasurer, Dr. A. J. Roberts, Ottawa; for member of board of censors, Dr. F. A. Wiley, Earlville; for member of medicolegal committee, Dr. E. W. Weis, Ottawa; to fill vacancy in office of alternate delegate, Dr. William Schoenneshoefer, Lostant.

LIVINGSTON COUNTY.

The nineteenth semi-annual meeting of the Livingston County Medical Society was held in Pontiac, May 5, with twenty-five members present. The forenoon was taken up with a clinic at St. James Hospital, where several interesting cases were shown, and three operations were performed. At the afternoon meeting the following officers were elected: President, V. M. Daly; vice-president, J. A. Marshall; secretary, John Ross.

Dr. F. A. Besley of Chicago read an interesting paper on "Fractures of the Skull." Several hours were devoted to the discussion of this paper, and the essayist was asked numerous questions on this subject, which were answered, and which cleared up many obscure cases which had occurred in the practice of the members of the society.

A banquet was given in the evening in honor of Dr. J. J. Stites of Pontiac, who has practiced medicine for sixty years. Dr. Stites is not only a veteran in the medical profession, but he is one of God's noblemen, whom the medical profession delight to honor. Dr. J. B. Baker was toastmaster, and Dr. J. D. Scouller, Sr., Dr. J. W. Pettit and Dr. J. J. Pearson responded to toasts. Dr. A. B. Middleton was elected a member of the medicolegal committee and also to serve as delegate to the State Society from this county; Dr. B. F. Elfrink, Chenoa, alternate. The secretary was sent to the state secretaries conference, his expenses being paid by the society. JOHN ROSS, Secretary.

LOGAN COUNTY.

BRAINARD DISTRICT MEDICAL SOCIETY.

The Brainard District Medical Society held its thirty-fourth annual meeting in joint session with the Logan County Medical Society, in the parlors of the Commercial Hotel, Lincoln, April 28, 1910. The meeting was called to order at 10:30 a. m., with President Don W. Deal of Springfield in the chair. The following answered to roll call: Drs. D. W. Deal and S. E. Munson, Springfield; L. M. Perry, Broadwell; H. G. Hardt, H. B. Brown, C. C. Montgomery, H. S. Oyler, L. E. Rourke, C. Rembe, W. W. Coleman, O. B. Caldwell, F. M. Hogans, and C. C. Reed, Lincoln; C. W. Carter, and G. W. Edmonson, Clinton; E. P. Sloan, Bloomington; F. M. Barringer, Emden; J. T. Woodward, Elkhart; Wm. McClelland, and A. L. Brittin, Beason; O. H. Butler, Hartsburg; W. V. Guttery, Middletown; E. E. Kelly, Mackinaw; and B. P. Bradburn, St. Louis. Visitors present were Maurice Altman, Springfield; W. W. Houser, L. T. Rhoads and C. E. Gaffner, Lincoln. The minutes of the Mason City meeting were read and approved. H. G. Hardt, Lincoln, extended the society an invitation to the thirty-fourth annual session of the American Association for the Study of the Feeble-Minded, to be held at the Lincoln State School and Colony at Lincoln, May 16, 17 and 18. The following officers for 1910-1911 were elected: President, H. G. Hardt, Lincoln; first vice-president, C. W. Carter, Clinton; second vice-president, C. W. Cargill, Mason City; third vice-president, E. P. Sloan, Bloomington; secretary, H. S. Oyler, Lincoln; treasurer, C. C. Reed, Lincoln; board of censors, Irving Newcomer, Petersburg, O. H. Butler, Hartsburg, and A. E. Campbell, Clinton. M. V. Guttery, M.D., Middletown, was elected to membership in the society. H. S. Oyler, Lincoln, was appointed to investigate the feasibility of a bulletin of the society. The following program was carried out: President's annual address, Don W. Deal, Springfield; "Paralytic Forms of Idiocy," C. B. Caldwell, Lincoln; "The Early Discovery of Dangerous Conditions in Pregnancy," Maurice Altman, Springfield; "The Treatment of Burns," C. W. Carter, Clinton; "Report of Fracture of the Clavicle and Its Treatment," B. M. Barringer, Emden; "Report of Some Cases of Infection with the Treatment Employed," G. S. Edmonson, Clinton; "Some Problems for the Twentieth Century Physician," J. T. Woodward, Elkhart; "Report of a Case of Tetanus Cured with the Antitetanic Serum," J. H. Butler of Hartsburg. The society was entertained and banqueted by the Logan County Medical Society.

MACON COUNTY.

DECATUR MEDICAL SOCIETY.

The regular monthly meeting of the Decatur Medical Society was held at the St. Nicholas Hotel at 8 o'clock, April 25, 1910. The regular order of business was dispensed with, and the society elected the following officers for the next year: Dr. C. Martin Wood, president; Dr. F. J. Mittan, vice-president; Dr. C. Roy Johnston, secretary-treasurer. The society then adjourned to the banquet hall. After the banquet Dr. A. C. Croftan delivered an address on

THE NEWER ASPECTS OF ALBUMINURIA, NEPHRITIS AND BRIGHT'S DISEASE. (Abstract.)

Dr. A. C. Croftan, Chicago, discussed some of the newer aspects of albuminuria, nephritis and Bright's disease, giving particular attention to the purely practical aspects of the question. The tendency to employ the terms albuminuria, nephritis and Bright's disease interchangeably and synonymously was condemned and particular emphasis placed on the necessity of clearly differentiating albuminurias not due to nephritis from albuminurias due to renal degeneration or inflammation. As an example of a non-nephritic albuminuria the pathogenesis and the treatment of so-called alimentary albuminuria was discussed and the biologic method of identifying food albumens that gain an entrance into the kidney, unchanged was described. This form of albuminuria was declared to be a prototype of other similar forms that were due exclusively to digestive disorders and not to circulatory or renal derangements. A definition was then attempted of Bright's disease in the modern sense and it was shown that the nephritis of Bright's disease is merely a symptom and as a rule a secondary event, not the determining factor in the production of the syndrome of Bright's disease. In many of these cases high blood pressure, presumably due to a gastrointestinal intoxication or to hepatic insufficiency, ushers in the disease, producing, primarily, certain changes about the heart and arteries that are quite characteristic, and, secondarily, certain changes about three organs in particular that are supplied by end arteries, namely, the kidneys, the retina and the brain. The treatment of chronic nephritis must concern itself in nearly all cases with promotion of intestinal antisepsis in order to prevent the continued entrance into the blood stream of certain toxic elements that possess pressor properties. The limitations of intestinal antisepsis and the technique were fully described and the use of bile acid salts was recommended in particular. Indications for the accomplishment of intestinal antisepsis are the disappearance of aromatic sulphates and compound glycocolls from the urine and the passage of brown stools, despite the administration of thirty or forty grains of a bismuth salts as an indicator. The question of nutrition was then taken up; the main indications for feeding in any chronic disorder being, first, the administration of a diet adequate to maintain the general nutrition; second, of a diet that incorporates no elements that can irritate the diseased organ (in other words of a diet that will spare the kidneys); third, of a diet that will do no harm to other organs of the body. A plea was made for more liberal feeding and some of the fallacies of the exclusive milk diet, that is so popular in the treatment of chronic nephritis, were exposed. It was shown that an exclusive milk diet, in order to provide adequate nutrition, would have to incorporate fully four to five liters of milk in the 24 hours; and this amount of milk contains very much more albumin than would be ordinarily administered on a slightly modified ordinary mixed diet. The deficit of iron in such a milk diet is also dangerous, while the flooding of the stomach and of the circulatory apparatus with immense quantities of water is decidedly detrimental. The rationale of liquid restriction in Bright's disease, especially in cases complicated with serious cardiac disorder, was explained and the rule formulated that the liquid intake should be gauged by the spontaneous liquid output. A short discussion was given of the principles underlying chlorid restriction and of the results that one might expect to obtain from this practice. And finally a critique was offered of the so-called surgical treatment of Bright's disease, and it was shown that this method of procedure is altogether irrational and has not led to the results claimed for it by many surgeons.

C. E. McClelland, Secretary.

M'LEAN COUNTY.

The regular meeting of the McLean County Medical Society was held Thursday evning, April 7, 1910, at the City Hall in Bloomington. Dr. W. H. Gardner gave a paper on "Surgery of the Hand." The discussion was led by Drs. R. E. Gordon, E. P. Sloan and W. E. Guthrie.

This was the annual meeting for the election of officers and one delegate to the meeting of the state society, which resulted as follows: President, Dr. E. Mammen, Bloomington; vice-president, Dr. J. H. Fenelon, Bloomington; secretary-treasurer, Dr. J. W. Dobson, Bloomington; board of censors, Drs. R. L. Yolton, A. L. Fox, and Thos. D. Cantrall; delegate, Dr. E. Mammen, Bloomington; committee on program for 1909-1910, Drs. J. L. Yolton, W. H. Gardner, and J. W. Dobson; committee on judiciary, Drs. J. B. Taylor, F. H. Godfrey, and O. M. Rhodes; committee on hygiene, Drs. Thos. W. Bath, R. A. Noble, and J. B. Taylor. The following is an abstract of the paper by Dr. A. L. Fox:

THE RELATION OF THE MEDICAL PROFESSION TO THE NON-MEDICAL PRACTITIONER. (Abstract.)

Since the early days of man the physician has been spoken of in various and divers ways, and only since the days of Galen and Hippocrates has he emerged into a definite and fixed profession. The Hippocratic oath is in itself a marvel of solid common sense, which we of this later day cannot improve upon. It stands like the laws of the Medes and Persians, unchangable in its fulness. Medicine, including surgery, pathology, chemistry, etc., has been but a compilation of the experiences of a multitude of minds, each working in his own chosen field of investigation, each adding something to the whole, from which has emanated the medical profession of to-day. The change in the law of practice has been great. The physician of the day of Galen would fail to recognize his brother of to-day and would probably pronounce him a fake. I well remember how Allen of Rush scouted the microbe theory in 1882-3, and yet it is here to stay. Palmer of the University of Michigan, lectured six hours on inflammation. Learned as he was he had no conception of the germ theory then coming upon the stage of activity. Hahnemann, notwithstanding his *similia similibus curantur*, has been a blessing to humanity. The regular practitioner has been more benefited by him than harmed. Our predecessors, against their wills, learned that small doses, giving the *vis Medicatrix Natura* a chance, prov d more successful than blood-letting and large unpalatable doses. The diagnosis of contagious diseases was as accurately made fifty years ago as to-day. Not so with infectious ones. And how greatly changed the treatment? Thompsonianism, Electricism, Hydropathy, Hahnemannism flourished in their day and now are nearly cults of the past, yet we have grasped the meat in the kernel of each one tenaciously, and that for the general good. We have now with us Osteopathy, Menteopathy, Magnetopathy, Hypnotism, Emmanuel Movement, so-called Christian Science and others too numerous to mention, each representing much gross material, yet each having something of real value which might be well for the medical profession to appropriate, seeing that the medical profession is but an outgrowth, a compilation of experiences, of facts and theories, some proven, some not. Not an exact science, but ever seeking a solution of the ills, and for the betterment, of the human race.

What should our relation be to the non-medical practitioner? Should it be strictly ethical, as medical ethics are understood, or should it be a careful analysis of the claims of the non-medical cult, appropriating whatever is of value, discarding what is unworthy of the profession. It becomes us to probe into all issues, informing ourselves thoroughly, so that we may be prepared to enlighten the public as to their exact standing, and when thoroughly informed speak with one accord in no uncertain voice so that it may be said of us, "He speaks as one having authority."

Our public relations with the non-medical practitioner should be kindly, gentlemanly, not as one having all knowledge. Ever open to conviction, yet conveying the impression, "So far shalt thou go, and no farther," until you substantiate your claims by indisputable proof. We should never meet them as equals in counsel, we should ever avoid this and let them and the public know that as soon as they will put aside what is of no value and prepare themselves as we have prepared ourselves, then will we accept them as our equals and extend to them the right hand of fellowship. I might enter into the relations of the midwife to the medical practitioner, the osteopath, the magnetic healer, the menteopath, the

Emmanuel movement, the so-called Christian Science, etc. Their legal status might be examined if time permitted. We should guard well our present defined rights, be jealous of every encroachment, be leaders for the public good and ever guard our standing as broad and cultured men.

The paper aroused a general and well directed discussion, which was profitable to all present. Dr. Fox closed.

Regular Meeting, May 5, 1910.

The regular meeting of the McLean County Medical Society was held May 5, 1910, at 7:30 p. m., at the City Hall in Bloomington. A paper on "Alcoholophilia" was read by Dr. Fred Parkhurst of Danvers. At this meeting Dr. T. W. Bath, health officer of the municipality of Bloomington, made his report. It is the first time such a report was made to the McLean County Medical Society. An abstract of it is herewith presented:

The sum of $11,150 was allowed his department for the fiscal year ending May 31, 1910. Of this sum $9,500 was spent for cleaning the alleys of the city. An inspection, April 7, of all the alleys of the city found them to be in a highly satisfactory condition. The Doctor said that he doubted if any city in Illinois could show so clean a condition of the streets and alleys.

The work of the Health Commissioner during his year's term of office had shown the following results:

An ordinance had been passed by the City Council to abolish the usual prevalent nuisance of the night burning of leaves. This the Health Commissioner thought was in the interest, not only of the public health, but public comfort as well. The ordinance had been quite satisfactorily complied with.

An ordinance making it necessary for the physicians to report within twelve hours from knowledge of the case, in addition to the usual diseases of diphtheria, scarlet fever and smallpox, which have always been reported, such diseases as tuberculosis, typhoid, measles, whooping-cough, chicken-pox, meningitis, acute poliomyelitis or any other disease dangerous to the public health.

Evidently physicians have forgotten to do so, for not a single case of typhoid, tuberculosis, or practically none of the new list have been so reported. Another notification will be mailed physicians, asking their assistance in getting in the health status of the city.

The anti-spitting ordinance, which laid dead on the statute for four years, was being enforced. For this purpose the commissioner had the ordinance printed in full on red cards and publicly displayed. The Health Commissioner also had passed an ordinance giving the department a right to see that second-hand goods and rummage sales be fumigated, if required.

Several analyses of the waters of the different wells within the city limits had been made, and all found highly polluted and unsafe to use. In each case the user of the well received a written notice to that effect. Several milk analyses had been made from time to time and the milk supply found fairly satisfactory. Since assuming office thirty-one houses had been quarantined for scarlet fever; two houses being quarantined twice, making a total of thirty-three homes. There had been forty-three cases of the disease; no deaths; eighteen homes quarantined for diphtheria; twenty-one cases, and one death; two homes for smallpox, with no deaths.

As a guide for teachers of both public and parochial schools, a pamphlet was gotten up by the commissioner treating briefly of the ordinary diseases of childnood, with simple points of diagnostic differences elaborated. In view of the severity of the epidemic which has swept the city during the winter months it is hoped the pamphlet will assist in knowing better how to deal with similar conditions in the future.

The Health Department believed it had rendered the public a fair sanitary service, but hoped in the following year to be of still greater benefit and asked that it might have the assistance of the profession toward that end.

The paper by Dr. Gardner followed in proper order. An abstract of this follows:

SURGERY OF THE HAND.

(Abstract.)

The most successful surgeons are the ones who are familiar with anatomy and surgical pathology; and who are endowed with the requisite amount of common sense and mechanical skill to plan and execute methods and modifications of amputations appropriate for each individual case. Incalculable harm has been done by trying to follow the footsteps of others, and this is more especially true of amputations. The surgeon must be familiar with the principles that underly the manual part of his work, the details of which require originality of thought and action.

In the operative removal of any part of the upper extremity the ultimate object of the operation must have in view a maximum functional result. Conservatism to its extreme limit is the rule that should guide the surgeon, in performing mutilating operations on the hands and fingers.

The hand is the part of the body where atypical operations are most frequently performed. Every finger and every joint of a finger are necessary for the full grasping power of the hand but the most important part of the apparatus is the thumb; for this reason the surgeon is always anxious to save every inch and every fraction of an inch of this, the most useful member of the hand.

In the disarticulation or amputation of the finger below the metacarpophalangeal joint the operation of choice is to cover the wound with a long palmar flap, but if the conditions are such that more of the finger can be saved by making a dorsal or lateral flap, the surgeon should not hesitate to pursue the more conservative course. The skin on the palmar surface is best adapted for a covering for the amputation wound, and as it is freely supplied with blood-vessels and possesses a maximum intrinsic recuperative power, there is very little, if any risk of gangrene in covering wound with one long oval flap. The flap should always be made by cutting from without inward—never by transfixion. A very important rule to follow in amputating a finger below its base and one that is too often ignored is to suture the extensor to the flexor tendon over the articular end of sawn surface of the bone. Tendon suture under such circumstances becomes a necessity for the purposes of preventing undue retraction of the flap and of furnishing the cut ends of the tendons with a permanent point of anchorage. In extensive injuries of the hand the prehensile power is preserved to a wonderful extent by preserving the thumb and little finger with the corresponding metacarpal bones.

In disarticulations at the meta-carpo-phalangeal joints the head of the metacarpal bone should always be preserved in cases in which a good functional result is of greater consequence than the cosmetic effect. In disarticulation of the little and index finger and thumb the flap is taken in preference from the palmar surface. Conservatism to the maximum limit is indicated more especially in operations about the base of the thumb, as the meta-carpal bone of this finger constitutes an important part of the grasping power of the hand.

DISCUSSION.

The discussion was opened by Dr. Sloan, who thought it difficult to locate pus easily; that the hyperemia methods of treatment is not indicated in acute cases. Dr. Cantrall thought every cellulitis of the hand a purely surgical case. Dr. Fulwiler thought an opening through the periosteum is indispensable to rapid recovery. Dr. Bath lauded somnoform in surgery of the hand, also thought a narrow, deep opening with small knives the proper way. Dr. Rhodes felt that somnoform should be used with caution for operations upon the hand were sometimes prolonged. Also that severed digits should be given a chance to adhere. Dr. Van-

dervort said that where ends of digits are lost, often by snipping the bones a repair would ensue more sightly than amputating. Dr. Dobson said by extreme conservatism in repair of damaged fingers many a hopeless looking member would be saved, owing to the great vascularity of the hand. Dr. Fenelon stated that delay of patient to give consent to opening of cellular abscesses frequently resulted badly. Dr. Hart urged the removal of all gun wads because of frequent tetanus. A general discussion of tetanus ensued in which the opinion prevailed that the filth on the person was carried into the tissues and developed the tetanus. Dr. Chapin thought tetanus frequently due to character of projectiles. Dr. Mammen thought the narrow gun wound made a good soil for anaerobic tetanus bacillus and hence advised free opening of all projectile wounds.

MONTGOMERY COUNTY.

The Montgomery County Medical Society met in regular semi-annual session at St. Francis Hospital, Litchfield, Ill., Tuesday, May 3, 1910, with President P. M. Kelly in the chair. Others present were: Z. V. Kimball, G. A. Clotfelter, L. S. Brown, W. W. Douglass, J. R. Kenton, Otto Hauser, R. N. Canaday, C. H. Lockhart, J. D. Colt, J. F. Blackwelder, M. W. Snell, G. A. Sihler, J. B. Watson, V. A. Carriere and H. F. Bennett. At a short business session H. F. Bennett was selected as delegate and Z. V. Kimball, alternate, to the coming session of the State Society at Danville. Dr. J. L. Wiggins, president of the Illinois State Medical Society, was present and conducted a most instructive surgical clinic, assisted by Dr. Florence L. Evans of East St. Louis. Dr. John Q. Roane, councilor for this district, was present and spoke in behalf of the State Society.

Adjourned. H. F. Bennett, Secretary.

MORGAN COUNTY.

The Morgan County Medical Society met Thursday, April 14, 1910, at 8 p. m., at the Dunlap House, Jacksonville, Ill., Dr. Grace Dewey presiding. Members present: Drs. Adams, Baker, Black, Bowe, Campbell, Cole, Crouch, Dewey, Duncan, Gregory, Hairgrove, Hardesty, Hinton, King, Milligan, McLaughlin, Norris, Pitner, Stacy, Stubblefield, Wertrees, Webster, Weirich and Woltman. Visitors: Drs. M. L. Harris, Chicago; L. J. Harvey, Griggsville; L. E. Orr and G. A. Lightle, Tallula; J. H. Spencer and W. A. Wesner, Murrayville; and W. W. Crane and L. H. Clampit, Jacksonville.

Dr. J. U. Day was nominated for membership, Drs. Wm. H. Weirich and Abraham Gregory, Jacksonville, were elected members.

The letter issued by the council relative to medical education and licensure in Illinois was read and considered, question by question. The society lined up as a unit for progressiveness along the lines suggested by the council. Gifts to the library from Drs. C. E. Cole and P. E. Hoffman were reported. A change in the by-laws providing for the election of a temporary delegate, when necessary, by members present at the State meeting, was proposed.

Dr. M. L. Harris of Chicago was present at the invitation of the society and gave an interesting paper on "Abnormal Mobility of the Liver," which was much appreciated and freely discussed by a number of the physicians present, and a vote of thanks was given the Doctor for his presentation of the subject.

Under the head of new business the question of the desirability of the city's taking its water supply from some comparatively shallow wells near the Mauvaisterre Creek, north of the city, which takes away the city sewage, was brought up for consideration. The society went on record unanimously as of the opinion that the site for such a municipal supply was undesirable. The meeting was preceded by an informal dinner at the Dunlap House. While here, Dr. Harris also spoke at a Business Men's Luncheon on the "Desirability of a National Board of Health with Representation in the Cabinet."

Regular Meeting, May 12, 1910.

The society met May 12, 1910, at the Library, Jacksonville, at 8 p. m. Dr. Grace Dewey presided. Members present: Drs. Adams, Baker, A. T. Barlett, C. E. Black, Bowe, G. R. Bradley, Crane, Crouch, Dewey, Duncan, Gailey, Hardesty, Hinton, McLaughlin, Norris, Ogram, Stacy, Treadway, Weirich and Woltman. The D. A. R. resolution advocating a sane Independence Day celebration, was presented and received the unanimous endorsement of the society.

Dr. Willard Bartlett of St. Louis was present by invitation and gave a new contribution to abdominal surgery, presenting "A Simple Method of Suturing all Hollow Viscera." The essential points of procedure are that suturing is done through and through and that anastomosis work is begun at the source of blood supply of the gut, the mesenteric border. (The article in full will appear subsequently in *Annals of Surgery.*) The paper was quite interesting; Dr. William Duncan led the discussion.

GEORGE STACY, M.D., Secretary.

PERRY COUNTY.

The Perry County Medical Society met at Du Quoin in regular session, May 16, and elected the entire list of old officers as follows: President, J. S. Cleland, Swanwick; first vice-president, J. S. Templeton, Pinckneyville; second vice-president, J. W. Smith, Cutler; third vice-president, F. M. Ward, Tamaroa. Drs. F. M. Ward, W. L. McCandless, and R. D. Pope were appointed a board of censors by the president. Dr. J. W. Smith, Cutler, was unanimously elected delegate to the annual meeting of the state society at Danville. After an informal discussion of various question the society adjourned to meet on the second Thursday in June.

J. S. CLELAND, M.D., President.
F. P. GILLIS, Secretary.

PIKE COUNTY.

At the regular annual meeting of the Pike County Medical Society, held in Litchfield, Thursday, April 28, 1910, Dr. G. U. McComas, New Canton, was elected president; Dr. C. E. Beavers, Barry, vice-president, and Dr. H. T. Duffield, Pittsfield, was reelected secretary and treasurer for the coming year. The clergy and other professions were invited to attend and hear an address by Dr. Black of Jacksonville on "Public Health and the Need of a National Board of Health, with a Secretary Who Should be a Member of the Presidential Cabinet." A few of those invited were present. Dr. Black also reported two surgical cases. Dr. W. E. Shastid reported a case of complicated alveolar abscess in a child.

Dr. A. J. Miller spoke of a case seen in council of abscess formation in the region of the appendix but without the usual signs of appendicitis, which in spite of thorough drainage and supporting treatment finally came to a fatal end.

Dr. H. T. Duffield reported a case of labor which was 44 days after rupture of sack and extensive loss of amniotic fluid. Labor finally came on at term and, though a breach presentation, lasting less than an hour. On advice the patient remained in bed a week after escape of fluid, then got up and went about her household duties. This was her third labor. Dr. Peacock spoke of one in his practice that went eleven days after rupture and loss of fluid.

A resolution was moved and adopted that the Pike County Medical Society fully endorsed the work of the Council on Medical Education of the American Medical Association and offers our support to that work. It was also moved that we hold our next meeting the last Thursday in June.

H. T. DUFFIELD, Secretary.

SHELBY COUNTY.

The Shelby County Medical Society met at the office of Dr. Eddy, in Shelbyville, Tuesday afternoon, April 5. Drs. Phifer and Stewardson were on the program for papers but on account of sickness neither was able to be present so a business and social session was held. The motion of Dr. H. E. Monroe to drop all names from the roll of the society who were in arrears for two years or over carried and the secretary was instructed by the president to notify the secretary of the state society of the action. The application for membership of Dr. F. A. Chapman of Sigel was presented and he was unanimously elected to membership. Dr. O. Z. Stephens, formerly of Strasburg, who recently returned from Effingham, was reinstated to membership. On invitation of Dr. Martin of Tower Hill the society decided to hold its next meeting in Tower Hill on the evening of May 3, at which time the Doctor will tender the society a banquet. There being no further business the society adjourned. DR. FRANK P. AULD, Secretary.

Meeting held May 3, 1910, at Tower Hill. The following officers were present: Dr. T. Ewing Cherry, president, Cowden; Dr. F. P. Auld, secretary, Shelbyville. The following papers were read and discussed: "Unusual Cases of Appendicitis," Dr. G. N. Kreider, Springfield; "Common Diseases of the Eye," Dr. W. J. Eddy, Shelbyville.

VERMILION COUNTY.

The Vermilion County Medical Society met in City Council Hall at 8:30 p. m., May 9, 1910, with Dr. Benjamin Gleeson in the chair. In the absence of Secretary Solomon Jones, Dr. R. L. Hatfield was asked to be the secretary pro tem. The letters from Dr. J. A. Egan to the secretary and president were read. It was moved, seconded, and carried to lay the communications on the table. Dr. J. M. Guy handed the secretary a letter from the Federation of Women's Club which was read. Dr. Guy later explained the idea of the Women's Federation was to give the poor of the different counties the best possible care. Dr. McIntosh said the Vermilion county poor are going to get better care than they heretofore have had. They are to have a trained nurse, proper diets and well equipped operating room. At this point the evening's scientific program was taken up.

Dr. E. E. Clark read an excellent paper on "The Eye and Its Relation to the Nervous System." This paper was most scientific and yet most interesting throughout, giving us many good diagnostic points. Dr. E. B. Colley then read a carefully prepared paper on "Melancholy." This paper was filled with practical thoughts. Many points were illustrated by the histories of the author's cases. Dr. Leitzbaugh of Fairmount led the discussion on these papers. He was followed by Drs. S. W. Jones and J. M. Guy. The discussion was closed by the authors of the papers. This being the last meeting before the state meeting Dr. Glidden was asked to give the society an idea of the progress made in the arrangements for that meeting, which he did. Twenty-eight members were present.

Adjourned. R. L. HATFIELD, Secretary Pro Tem.

WABASH COUNTY.

The Wabash County Medical Society met in the office of Dr. S. W. Schneck's Building, at 3 p. m., April 26, 1910. Meeting called to order by Dr. C. E. Gilliatt, president. There were present Drs. E. B. Fisher, S. W. Schneck, P. G. Manley, R. S. Manley, W. H. Robinson, J. B. Maxwell, C. E. Gilliatt, J. E. Smith, and H. C. Mitchell, Carbondale. Dr. R. G. McMurray was elected delegate and Drs. C. E. Gilliatt and J. B. Maxwell, alternates to the State Medical Society. Dr. R. S. Manley opened the discussion on "Summer Diarrhea in Children." The discussion was taken up by S. W. Schneck, C. E. Gilliatt, and J. B. Maxwell, and the entire treatment was reviewed in a most thorough and profitable manner. Dr. H. C. Mitchell, Carbondale, Councilor for the Ninth District Illinois Medical Society,

was present by invitation and read a paper on the subject, "Legislation Injustice and Political Apathy, Weakening Factors in Medical Organization," which was an able paper and was well received by all present. The society on motion adjourned.

J. B. MAXWELL, Secretary.

WASHINGTON COUNTY.

The Washington County Medical Society met at Nashville, Thursday, April 14. Those present were Drs. J. J. Troutt, R. E. Vernor, Roscoe Vernor, Jas. McIlwaine, D. S. Neer, R. C. Boos, L. A. Neudecker, R. B. Jack, L. P. Schraeder, J. F. White and C. J. Sanders, members, and Prof. Hugo Summia of St. Louis. The meeting was called to order by the president, Dr. D. S. Neer. The annual election of officers was held. Dr. D. S. Neer was reelected president; Dr. S. P. Schroeder, vice-president; Dr. J. J. Trout, treasurer, and Dr. C. J. Sanders, secretary. After the general form of business was dispensed with a very interesting lecture was given by Professor Summia on the floating tenth and gliding ninth ribs and their association with abnormalities in the abdomen, viz., Glenard's disease, misplaced kidney, liver, spleen, pancreas, etc. He also made very clear the relation between the floating tenth rib and the phthisical habitus. After this lecture several cases were presented for diagnosis and Professor Summia made an interesting talk on each case which was very instructive to all present. After the presentation of the cases, there being no further business, the society adjourned until its next regular meeting.

CLAUDE J. SANDERS, Secretary.

NEWS OF THE STATE

PERSONAL.

Dr. and Mrs. Theodore Wild, Jr., of Chicago, sailed for Europe April 28.

Dr. Orlando F. Scott has been appointed health officer of Summitt and Argo.

Dr. Edward Bowe has severed his connection with Maplewood Sanitarium, Jacksonville.

Dr. Frank Parsons Norbury has severed his connection with the Maplewood Sanitarium, Jacksonville.

Dr. and Mrs. David Fiske, and Dr. C. Bruce Walls and family, of Chicago, have started for Europe.

Dr. and Mrs. Wm. L. Karcher, Freeport, spent April in the East, where the Doctor visited several hospitals.

Dr. U. N. Thornton, Leland, has disposed of his practice to Dr. A. O. Strout, of Danville, who has taken charge.

Dr. Aloys Heinen announces his departure to Berlin, Germany, for a course of studies, and will return October 1.

Dr. Wm. H. Weirich, Carnegie University, Bennett Medical College, 1909, has located in Jacksonville for the practice of medicine.

Dr. William W. Williams has been elected president, and Dr. Kirk S. Shawgo secretary of the staff of the Blessing Hospital, Quincy.

Dr. H. H. Ross, of Murphysboro, will take a postgraduate course in Eye, Ear, Nose and Throat work in Chicago, during June and July.

Dr. A. A. Mathews, of Oak Park, who has spent the winter in the South, announces that, because of ill health, he will not resume practice.

Dr. J. J. Troutt, Nashville, candidate for alderman on the Good Government ticket, while returning from Plum Hill, was injured internally in a runaway, last month.

Dr. Magnus Levy, Berlin, who is staying in Chicago for a few days, on his way to the West, was tendered a dinner at the University Club, May 23, by a few of his medical friends.

Dr. F. P. Pratz, formerly of Decatur, has purchased the practice of Dr. O. W. Swope, of Holly. Dr. Swope will do post-graduate work in the East before deciding upon a location.

Dr. A. R. Gregory, Michigan University, 1907, is going to practice medicine in Jacksonville, devoting his time to eye, ear, nose and throat work. Dr. Gregory is a graduate of Illinois College (1903).

While going home from his place of business, about 10 o'clock, Dr. W. L. Sugget, a money lender, of Flora, was knocked down and robbed of $5 in cash and a diamond ring and a shirt stud valued at $500.

Emil Biorn and Dr. Niles T. Quales, leaders in the Chicago Norwegian Colony, have been decorated by King Haakon VII, with the Order of St. Olaf. Both were appointed to the grade of "Knight." The

decoration consists of a gold and enamel star bearing the coat of arms of Norway and attached to a red, white and blue ribbon. Dr. Quales lives at 1951 Fowler Street, and Mr. Biorn at 1536 North Oakley Avenue. In the case of the physician the decoration was given in recognition of extensive charitable work among his countrymen. Dr. Quales is the president and founder of the Norwegian Old Peoples Home Society.

NEWS.

—Dr. E. H. Hermann has removed from Highland to Fillmore.

—Dr. B. H. S. Angear, of Sublette, has begun the erection of a twelve-room hospital building, with modern appliances.

—Schering and Glatz, of New York City, expect, in the near future, to move into their new five-story building, 150-152 Maiden Lane, New York.

—A memorial service for Dr. Howard Taylor Ricketts, assistant professor of pathology in the university, was held in Leon Mandel Hall, University of Chicago, May 15.

—Work on the annex of St. Vincent's Hospital, Taylorville, began April 28. The annex will contain a maternity ward and will increase the capacity of the hospital to seventy.

—In the case of Dr. Paschall N. Bowman, Gillespie, charged with manslaughter by the alleged unskillful performance of an operation, the jury was unable to agree and was discharged.

—Rockford Hospital, in its report for the year ending January 1, announces that it closed with a deficit of about $1,500, most of which was made up of outstanding obligations of patients.

—Dr. Wm. H. Miller, convicted of the murder of John Saylor, Crescent City, and sentenced to twelve years' imprisonment in the state penitentiary, was taken to Joliet, May 10, to begin his sentence.

—Mrs. Ernestine Petersen, matron of the so-called Red Cross Sanitarium, Rock Island, on May 4 is said to have been fined $100 and costs on each of ten charges of violating the medical practice act of Illinois.

—It is reported that a merger has been completed between the Bennett Medical College and the Illinois Medical College, Chicago, the latter of which recently became the Medical Department of Loyola University. The new school will retain the name of Bennett Medical College.

—Dr. I. H. Hirschfield, having severed his connection with the North Shore Health Resort, at Winnetka, Ill., the board of directors are pleased to announce the appointment of Wm. P. Forkin, M.D., of Chicago as medical director. Dr. Forkin will have full management of the institution.

—Mrs. Gervaise Graham, Chicago, is reported to have been fined by Judge Landis, May 16, for misbranding a dandruff cure. The wrapper bore a printed statement that a cure was guaranteed, but the government declared that it is not possible to guarantee a cure for this condition of the scalp.

—In the case of Dr. St. Elmo M. Sala, Rock Island, against Charles E. Dempsey, a verdict was returned for the plaintiff, May 17, with damages of $112. This case is interesting, as the defendant had previously brought suit for $10,000 for malpractice and was non-suited. The litigation has continued for about five years.

—Dr. Frederick G. Harris, Chicago, wishes to announce that the association recently existing between himself and Dr. B. C. Corbus has been terminated. Dr. Harris, as heretofore, will confine his practice to dermatology and genito-urinary diseases, at suite 407 Schiller Building, 109 Randolph Street; telephone, Randolph 3051.

—The Springfield City Council, at its meeting of May 31, put a ban on the distribution of patent medicine samples. The ordinance provides a penalty of no less than $5 or more than $25 for each offense. It is said to have been drawn by the aldermen of the Fifth Ward because a child had been made seriously ill by eating samples of medicine left in a door yard. Phrenologists, who announce themselves in Springfield, were also given consideration by the Springfield council at the same meeting, and must pay a license of $25 per month. Some of the councilmen believe the fee should be $100.

—Several hundred men and women prominent in professional life in Chicago gathered at the Whitney Opera House, to do honor to the memory of the late Dr. Byron Robinson, who died March 23, at his home in River Forest. The program was opened by Dr. Peter T. Burns, chairman of the memorial committee, who introduced President Chas. R. Van Hise, of the University of Wisconsin, to preside. The invocation was read by Bishop Samuel Fallows and Dr. W. A. Evans, city health commissioner, gave an address on the life and work of the late physician. Dr. Burns read messages from persons and organizations in various parts of the country.

—The new medical building at the Edward Sanatorium, Naperville, Illinois, was opened for admission of patients on Monday, May 2. The building is fully equipped for medical work and is modern in every respect. This institution for the treatment of incipient cases of tuberculosis at present consists of a forty-acre farm, general administration building, medical building, six open air shacks, individual tents, etc. The present capacity is sixty beds. Charges to pay-patients are $10 per week, including board, laundry and medical services. Applications for admission should be made to the Chicago Tuberculosis Institute, 158 Adams Street, Chicago, Ill., of which organization the Edward Sanatorium is a department.

—At the thirty-fourth annual conference of the American Association for the study of the Feeble-Minded, which was held at the Lincoln State School and Colony, Lincoln, Illinois, May 16-18, 1910, the following officers for the ensuing year were elected: President, A. R. T. Wylie, M.D., Faribault, Minn.; vice-president, H. G. Hardt, M.D., Lincoln, Ill.; secretary and treasurer, A. C. Rogers, M.D., Faribault, Minn.; editor-in-chief, Journal of Psycho-Asthenics, A. C. Rogers, M.D., Faribault, Minn.; associates, W. E. Fernald, M.D., Waverly, Mass.; M. W. Barr, M.D.,

Elwyn, Pa.; Geo. Mogridge, M.D., Glenwood, Iowa.; A. R. T. Wylie, M.D., Faribault, Minn.; H. H. Goddard, M.D., Vineland, N. J.; H. G. Hardt, M.D., Lincoln, Ill.; C. S. Little, M.D., Laconia, N. H.

—Dr. Geo. E. Pettey, of Memphis, has admitted his former assistant, Dr. W. R. Wallace, as a full partner in his sanitarium, and they have built a forty-room addition to their sanitarium. The new building has been constructed according to plans especially adapted to their work, rooms en suite or single, with private bath, hot and cold water, electric bell system, steam heat, with every modern convenience for the employment of hydro- and electro-therapy. Separate buildings for male and female patients. While their work will be principally confined to the treatment of alcohol and drug addiction they will hereafter also admit patients suffering from mental and nervous diseases. A detached building will be used for mental cases where special attention will be given to the treatment of acute insanity. Violently insane patients will be admitted for treatment during the acute stage.

PUBLIC HEALTH.

—The Rockford Hospital is said to be in need of an additional building.

—The La Salle public library is to have a medical department, supported by the interest on the $10,000 city hall improvement bonds.

—Lakeview Hospital, Danville, has installed a modern operating room and sterilizing outfit. It has accommodations for fifty patients.

—Chicago now has a municipal lodging house for women, at 3040 Calumet Avenue, where "lady bos" can find all the comforts of a home.

—Nearly 50,000 Florence Nightingale postal cards have been placed on sale by the Illinois State Association of Graduate Nurses, to raise funds for a new home for tubercular nurses.

—The annual report of the Galesburg Hospital showed 751 patients treated, including 674 pay patients. Total receipts were $35,396. Twenty-six nurses are training in the institution.

—Dean Sumner found the Eastern open-air schools superior to the Chicago kind to the surprise of the school board. The rusty old drinking cups are under the ban and will soon make way for the sanitary "bubbling" hydrants at all the city schools.

—President Busse, of the Cook County board, recommends the appointment of a commission of fifteen experts to investigate and report a comprehensive plan for replacing the old County Hospital with new buildings to accommodate at least 2,500 patients.

—A regiment of laboring men to fight the "white plague" is being organized in Chicago. This first company, called "The Gads Hill Anti-Tuberculosis Club," was begun in April, with A. W. Xasang, of the McCormick Harvester Co., as president. The club has 100 members and all wear red cross buttons.

—A Jacksonville editor is evidently discouraged with the contributions of the Local Anti-Tuberculosis Society. "We should be proud to have heralded to the world of suffering humanity our interest. We, as a community of 25,000 men, women and children, should feel chesty and inflated because our names are written high upon the anti-tuberculosis scroll, followed by the munificent contribution of $68."

—Dixon Public Library has recently received several valuable contributions of medical books from Drs. Hunt and Blackman, of that city. Dr. Hunt has given his entire library of seven hundred volumes, which he has been collecting for over forty years, the only condition imposed upon the gift being that the library subscribe for the ILLINOIS MEDICAL JOURNAL and the *Journal of the American Medical Association.*

—The sanitary district trustees have adopted the report of their engineering committee recommending the immediate construction of a ditch connecting the Little Calumet River and the main canal at the Sag. President McCormick said, "Though the secretary of war again refused our petition and is sustained by Congress and the Supreme Court of the United States, a channel of some kind, open or closed, must be cut across the Sag valley." The experimental sewage filtration plant showed that it would not be safe to discharge sewage thus treated into Lake Michigan. Trustee Clark said that conditions in the Calumet region are almost intolerable; that they threatened a half million people with an epidemic of typhoid fever. The trustees hope that the new chief of engineers of the army will not oppose their views as the present chief has done.

—The epidemic of measles in Chicago had its high point in the week ended April 29, with 530 cases and 11 deaths. With the waning of this zymotic disease the *Bulletin* announces a strange new infection which threatens to become virulent, viz: the "Healthgrams," which have issued in a devastating stream from that publication. Another innovation in the *Bulletin* is a series of knocks on the time-honored so-called "dirty epigrams," such as, "People were healthier in the good old days," and "Stinking things are healthful." Still another new feature, not to say defect, is a correspondence school for midwives. The opinion is heard in some quarters that the trouble with midwives is fundamental and not capable of alleviation by anything less than capital punishment. Full directions for the diagnostic use of old tuberculin were given in the *Bulletin* of May 14.

—The *Bulletin* of the Chicago Department of Health, May 28, pays the following tribute to the Michigan State Board of Health:

It is now June 1. Our people are beginning to plan their summer vacations. Some of them are benefited by their outing; many of them will be harmed by it. A good many people who lead careful lives at home get reckless when they go away. They will drink any kind of water; will stand for dirty milk; will tolerate flies. It is vacation and "anything goes." A fair percentage of our typhoid is brought about in this way. The Michigan State Board of Health has furnished us with a sanitary report on 34 resort towns. If you will write to the Health Department we will endeavor to advise with you as to the sanitary status of outing places in Michigan. We hope that we may obtain similar information for resorts in Wisconsin. The State Board of Health in Michigan is rendering a service to

not only our people but also to the people of its own state. Resorts which properly protect their patrons should be encouraged. They have also a right to protection from the harm done Michigan as a summer resorting place by those who, being slovenly, trade on the name and do harm to the cause.

—The state board of health, at a meeting, May 24, revoked the license of Dr. Alexander Chittick for running a diploma mill in Chicago. The trouble started for the so-called Chicago Medical University and Crescent Medical University when Miss Ida J. Mann, of Alvaton, Georgia, informed the state board how easily she secured diplomas, degrees in medicine, pharmacy and other sciences. She secured the "M.D." diploma by mail after sending a few dollars and answering a few fake questions. Her answers to the questions were so excellent that the "universities" gave her other diplomas for a little loose change, without asking any more embarrassing questions. A charter for Chicago medical university was issued to reputable men in 1865 but was never used by them. Besides the three names mentioned the diplomas carried the names of the following: H. J. Cameron, LL.B., Medical Jurisprudence; F. L. Johnson, M.D., Obstetrics; F. Bupp, M.D., Obstetrics, Nursing; C. M. Chaffee, M.D., Physiology; L. R. Fowzer, M.D., P.H., Hygiene; E. W. Jones, M.D., Materia Medica and Therapeutics; Arthur Nellis, B. M. Daniels, M.D., Obstetrics and Gynecology; John W. Drewitz, Ph. G., Chemistry; James Chittick, Professor of Practicing Pharmacy. It is rumored that the faculty will have to run the gauntlet of federal jury action for fraud.

REMOVALS.

Dr. L. L. Fowler has removed from Menard to Marion.

Dr. Edwin McGinnis has removed from Chicago to Orland.

Dr. Fred C. Denkinger has removed from Ottawa to Chicago.

Dr. L. P. Dawes has removed from Chicago to Wrangle, Alaska.

Dr. Geo. Whitney has removed from Springfield to Ignacio, Col.

Dr. John J. Nolan has removed from Chicago to Milwaukee, Wis.

Dr. Palmer E. Brandon has removed from Chicago to Jackson, Minn.

Dr. H. M. Austin has removed from Hindsboro to South English, Iowa.

Dr. C. F. Burkhardt has removed from Covington, Ky., to Effingham.

Dr. C. R. VanMeter has removed from Springfield to Fancy Prairie.

Dr. O. C. Galbe has removed from Addisonville to New Salem, N. D.

Dr. Ella Cleverdon has removed from Joliet to 1106 Webster Avenue, Chicago.

Dr. W. A. McDowell has removed from Rockford to Otis Orchards, Washington.

Dr. Robert B. Stephenson has removed from Joliet to 1106 Webster Avenue, Chicago.

Dr. G. A. Baughman has removed from Neoga to Strasburg, Saskatchewan, Canada.

Dr. C. W. Gould has removed from Fairdale to 2339 Whittemore Place, St. Louis, Mo.

—Drs. D. S. Hamilton and B. N. Hamilton have removed from Chicago to Greybill, Wyo.

Dr. M. L. Brookshire has removed from 1647 Broadway, East St. Louis, to Bloomington.

Dr. John A. Ospray has removed from Chicago to 1215 North Nevada Avenue, Colorado Springs, Col.

—Dr. G. W. Green, 4612 North Lincoln Street, has removed to 4537 North Winchester Avenue, Chicago.

Dr. Geo. M. Haines has removed from Durand to Grand Junction, Colorado; R. F. D. No. 3, Box 119.

Dr. Ralph M. Carter has removed from Cook County Hospital, Chicago, to Hinton Hospital, Hinton, West Virginia.

Dr. John R. Harger announces the removal of his office and residence from 334 S. Francisco Avenue to 2912 Jackson Boulevard, Chicago.

Dr. Peter Bassoe has removed his office to 905 Venetian Building, 34 Washington Street. Hours, 1:30 to 3:30. Telephone, Randolph 3724.

Dr. Edwin M. Ryerson announces the removal of his office from 100 State Street, Chicago, to Suite 1411, 150 Michigan Avenue, Chicago; Central 5670; hours, 9 to 11.

Dr. James Murray Washburn announces the removal of his office from 100 State Street, Chicago, to Suite 1401, 150 Michigan Avenue, Peoples Gas Building. Hours, 9 to 11 a. m. Telephone, Central 556.

Dr. Hollis E. Potter announces the removal of his X-Ray Rooms to the Peoples Gas Light Building, 150 Michigan Avenue, where he will occupy Suite 1408-10. Hours, 1 to 5 P. M. Telephone, Randolph 3970.

Dr. P. J. H. Farrell announces the removal of his office to Suite 602 Reliance Building, 100 State Street, Chicago. Practice limited to diseases of the eye, ear, nose and throat. House 10 to 1, and afternoon by appointment. Telephone, Randolph 3401.

NEW INCORPORATIONS.

—Chicago Anatomical Association, Chicago; advancement of science of anatomy; incorporators, Chas. Wolff, Arthur W. McGovney, Frank C. Rathje.

—Passavant Hospital Training School for Nurses, Chicago; establish training school for nurses; incorporators, Oren J. Waters, Herman L. Fritsche, Martha Gensike.

MEDICAL SOCIETY NOTES.

—The Marion County Medical Society met in Centralia April 29, with a banquet.

—The East St. Louis Medical Society has elected Dr. L. D. Applewhite president. Dr. U. S. Short vice-president and Dr. C. W. Lillie secretary-treasurer.

—The Douglas County Medical Society held its regular annual meeting April 7, at K. P. Hall, Tuscola. Dr. Frank P. Norbury, superintendent of the Kankakee insane asylum, gave an address on "The Early Recognition of Mental Diseases."

—The Stephenson County Medical Society met April 28 at the court house in Freeport. Dr. K. F. Snyder read a paper on "Diphtheria Antitoxin in the Treatment of Diseases other than Diphtheria." Dr. E. S. Murphy presented "The Diagnosis and Treatment of Gastric Ulcers."

—The thirty-sixth annual meeting of the Central Illinois District Medical Society was held in Pana, April 26. The following officers were elected: President, Dr. Roscoe C. Danford, Pana; vice-presidents, Drs. Geo. J. Rivard, Assumption, and William H. Sparling, Moweaqua; secretary, Dr. Walter Burgess, Pana; treasurer, Dr. J. N. Nelms, Taylorville, and censors, Drs. Jacob Huber, Louis H. Miller and Frederick J. Eberspacher, Pana; Dr. Wm. J. Eddy, Shelbyville, and Dr. Dorwin D. Barr, Taylorville.

—At the annual meeting of the Brainard District Medical Society, held in Lincoln, April 28, the following officers were elected: President, Dr. Harry G. Hardt, Lincoln; vice-president, Dr. Chas. W. Carter, Clinton; Chauncy W. Cargill, Mason City, and Edwin P. Sloan, Bloomington; secretary, Dr. Harry S. Oyler, Lincoln, and censors, Drs. Irving Newcomer, Petersburg; James H. Butler, Hartsburg, and Albert E. Campbell, Clinton. The next meeting will be held in Springfield in July. Dr. E. H. Best, "The Physician's Relation to the Health Officer."

—The La Salle County Medical Society held its fifty-seventh annual meeting at the Good Will Church, Streator, April 26. President G. T. Love presided. Dr. T. N. Curry presented a "Case of Skin Grafting." R. T. Pettit, B.S., of Chicago University, read a paper on "Vaccine Therapy." E. E. Perisho presented "Cholelithiasis." Geo. P. Mills, chairman of the propaganda committee, Evanston, presented "Propaganda as Applied to U. S. P. and N. F. Medications." Dr. David S. Conley, Streator, was elected president. Dr. E. H. Butterfield, Ottawa, vice-president, and Dr. A. J. Roberts was reelected secretary-treasurer.

MARRIAGES.

Jacob Kulis, M.D., to Miss Edith A. Olsjewski, both of Chicago, recently.

Overton Brooks, M.D., to Miss Emilgene Wortsman, both of Chicago, recently.

S. Curtis Johnson, M.D., to Miss Carolyn A. Shaw, both of Chicago, April 12.

Jacob Myers, M.D., Chicago, to Miss Gertrude Myers, of Mt. Pulaski, Ill., April 20.

Lester Edwin Mee, M.D., to Miss Charlotte Grubb, both of Chicago, April 27.

Milo Tripp Easton, M.D., to Miss Mary Helen Blackburn, both of Peoria, May 18.

Daniel S. Hager, M.D., to Miss Mary Nicholas, both of Downers Grove, March 28.

Chas. Moore Robinson, M.D., to Mrs. Jessie B. Arundell, both of Chicago, April 7.

John W. Kelly, M.D., to Miss Maud Josephine Wolfe, both of Springfield, May 7.

Eugene S. Talbot, Jr., M.D., to Miss Della Boardman, both of Chicago, March 29.

Hayden Lyle Fisher, M.D., Kewanee, Ill., to Miss Elizabeth Poole, of Chicago, May 18.

E. Don Taylor, M.D., Watertown, to Miss Katie Swanson, of Colona, at Moline, March 16.

Harlow V. Wilson, M.D., to Mrs. Daisy Jones, both of Champaign, Ill., at Chicago, April 30.

Francis W. McNamara, M.D., to Mrs. Ella May Eldredge, both of Chicago, March 19, 1910.

Gary Thomas Gossard, M.D., Perry, to Miss Jessie M. Fisher, of Chicago, at Perry, April 5.

Charles Richard Bates, M.D., to Miss Marian Gerard Alexander, both of Camp Point, April 4.

Arthur Bennett Eustace, M.D., to Miss Florence Francis Mix, both of Chicago, Dec. 26, 1909.

Dr. Clyde B. Cammerer, Assistant Surgeon U. S. Navy, to Miss Martha Stueber, both of Kinmundy, Ill. They will reside at Norfolk, Va.

Mortimer Elihu Emrick, M.D., to Miss Katherine M. Scanlon, both of Chicago, at South Bend, Ind., May 17.

DEATHS.

Dr. M. G. Reynolds, of Aledo; died May 13, 1910, at Redwood Falls, Minn.

James M. Watkins, M.D., Rush Medical College, Chicago, 1864; died at his home in Green Valley, March 22, aged 79.

Mrs. J. I. Hale, wife of Dr. J. I. Hale, a prominent physician and owner of Hale's Sanitarium, at Anna, Ill., died in that city, aged 66.

Oel Sage Misick, M.D., Rush Medical College, Chicago, 1894; died at the Elgin State Hospital, Elgin, Ill., April 8, from paresis, aged 42.

George Francis Haynes, M.D., Eclectic Medical Institute, Cincinnati, 1872; died at his home in Chicago, January 2, from cerebral hemorrhage, aged 73.

Henry Clay Cress, M.D., Jenner Medical College, Chicago, 1901; of Chicago; died in Provident Hospital in that city, November 15, 1909, from pneumonia, aged 34.

Susan Kendall Daggett Whitford, M.D., Bennett Medical College, Chicago, 1870; a pioneer woman practitioner of Elgin; died at her winter home in Ozona, Fla., March 16, aged 73.

Wm. W. Gould, M.D., Berkshire Medical College, Pittsfield, Mass., 1852; for 50 years a practitioner of Rochelle, Ill.; died at his home April 24, from cerebral hemorrhage, aged 83.

Robert M. Pollock, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878; a practitioner, and of late banker of Nebo, Ill.; died at his home in that place, April 18, aged 67.

Edwin J. Keifer, M.D., Cincinnati College of Medicine and Surgery, 1869; a member of the Illinois State Medical Society; died at his home in Harvey, April 29, from arteriosclerosis, aged 66.

Clarence Duane Heflin, M.D., Keokuk, Iowa, Medical College, 1895; formerly of St. Joseph, Mo.; died in St. Francis Hospital, Kewanee, Ill., March 29, from pernicious anemia, aged 41.

Dr. Daniel D. Brengle (license, years of practice, Ill., 1879); for 65 years a practitioner of Winchester, Ill.; died at the home of his son in that city, April 24, from cerebral hemorrhage, aged 92.

Hiram Newton Whitacre, M.D., Medical College of Ohio, Cincinnati, 1878; a member of the American Medical Association; died at his home in Carbondale, Ill., March 19, from pneumonia, aged 62.

Edward Ellis Nathan, M.D., Chicago College of Medicine and Surgery, 1905; College of Physicians and Surgeons, Chicago, 1906; died April 18, as the result of drinking cyanide of potassium with suicidal intent, aged 26.

William H. Elliott, M.D., American Medical College, Eclectic, St. Louis, 1878; who conducted a sanitarium for many years at Havana, Ill.; died at his home in Bardolph, Ill., March 24, from carcinoma of the rectum, aged 74.

Joseph Dawson, M.D., Rush Medical College, 1885; Hahnemann Medical College of the Pacific, San Francisco, 1892; three years surgeon of the state penitentiary, Joliet; died at his home in Wauconda, Ill., March 24, aged 63.

James McCann, M.D., Western Reserve University, Cleveland, 1856; of Normal, Ill.; formerly a member of the local pensioning examining boards of Joliet and El Paso, Ill.; died in the Kelso Sanitarium, Bloomington, March 18, from ptomain poisoning, aged 77.

William A. Tichenor, M.D., Washington University, St. Louis, 1879; of Chicago; formerly superintendent of the Missouri State Hospital for the Insane, No. 3 Fulton; was found dead in a hotel in Chicago, April 8, from heart disease and narcotic poisoning, aged 50.

Joel G. Williams, M.D., University of Missouri, Columbia, 1856; a member of the Illinois State Medical Society; assistant surgeon of the Second Illinois Volunteer Cavalry during the Civil War; died in a cottage at the Soldiers Home, Quincy, March 17, from heart disease, aged 75.

George W. Rohr, M.D., Northwestern University Medical School, 1862; Illinois Army Board, 1864; a member of the Illinois State Medical Society; surgeon of the Fifty-second Illinois Volunteer Infantry throughout the Civil War; local pension examiner; for more than 40 years a practitioner of Rockford; died at his home, May 5, from heart disease, aged 76.

James R. Kewley, M.D., Chicago Medical College, 1876; of Chicago; a member of the American Medical Association and of the Chicago Medical Examiners' Association; oculist and aurist to the Peoples' Hospital; a member of the staff of the Mercy Hospital for several years; an Odd Fellow of high rank; died in Eustis, Fla., April 14, from myocarditis, aged 56.

Dr. J. E. Groves, Altamont, Ill.; died May 16, 1910, aged 45. Dr. Groves had suffered for more than two years, during which time he had undergone several operations, without success. He was a graduate of Bennett, of Chicago, 1887, and had practiced at Greenville, Effingham, and St. Louis, the Illinois Southern Hospital for the Insane at Anna, and Altamont. He was a devoted member of the Methodist Church, from which the funeral was conducted May 19.

Oscar C. DeWolf, M.D., New York Medical College, New York City, 1858; Medical Department of the University of France, Paris, 1860; from 1877 to 1889, health commissioner of Chicago; of national prominence in sanitary matters; the first commissioner of health to cause warning cards to be placed on houses where contagious disease existed; during whose administration house-to-house vaccination was first thoroughly enforced; professor of surgical pathology in the Medical School of the University of Ohio, and later professor of state medicine and public hygiene in the Northwestern University Medical School; died at his home in Chester Center, Mass., March 28, from cerebral hemorrhage, aged 74.

Anson Luman Clark, M.D., Eclectic Medical Institute, Cincinnati, 1861; formerly president of the National Eclectic Medical Association; one of the founders and for thirty-five years president of, and emeritus professor of Obstetrics in Bennett Medical College, Chicago; gynecologist to Bennett Hospital; attending physician and surgeon to Sherman Hospital, Elgin, Ill.; local surgeon to the Chicago, Milwaukee and St. Paul Railway; for 14 years a member and treasurer of the State Board of Health; a member of the 27th General Assembly; a member and for 5 years president of the Board of Education of Elgin; assistant surgeon of the 127th Illinois Volunteer Infantry throughout the Civil War; one of the most prominent and esteemed Eclectic practitioners of the West; died at his home in Elgin, April 11, from uremia, aged 73.

Howard Taylor Ricketts, one of the most noted workers in the field of research, died in the American Hospital in the City of Mexico, May 3, from typhus fever, contracted while pursuing investigations regarding the causation of the disease, aged 39. He received his literary degree from the University of Nebraska, Lincoln, in 1894, and was graduated from the Northwestern University Medical School, Chicago, in 1897. He served as intern in the Cook County Hospital from 1897 to 1899, and then continued his research work; was made fellow in cutaneous pathology in Rush Medical College, and in 1899 was made instructor in pathology. During this time he pursued his researches on blastomycosis. In 1902, Dr. Ricketts was made associate professor of pathology in the University of Chicago. His next important work in medical

research work was regarding the Rocky Mountain spotted fever (tick fever), which occupied his attention for several summers. In 1906 his book on "Infection, Immunity, and Serum Therapy" appeared, which has gone through three editions and is a very complete short treatise on the subject. His latest research work was on the causation of typhus fever (tabardillo), which has been epidemic in Mexico for some time past. He was recently appointed professor of pathology in the University of Pennsylvania, and accepted the position with the understanding that he was to be free to continue his researches during the winter, spring and summer. Dr. Ricketts has been for several years a valued editorial writer on the *Journal of the American Medical Association* and much of his research work has been done under grants made by the committee on scientific research of the American Medical Association. His society membership included the American Medical Association, The American Association of Pathologists and Bacteriologists, and the Chicago Medical, Clinical, and Pathological Societies. He was a persistent, untiring and insatiable worker, and to this his illness and probably his death is due, as he was worn out when he returned to Mexico in April. A signal of honor was shown Dr. Ricketts' memory when President Diaz of Mexico directed that the professors and students of the National Medical School be present on the occasion of the removal of the body to Chicago, and that the medical school be draped in mourning three days. The *Brooklyn Eagle,* in commenting on Dr. Ricketts' illness, stated: "We may thus add one more name to the list of modern martyrs of science who get but a passing thought from the preoccupied people of the United States." The Chicago *Evening Post,* in an editorial, April 30, before his death, said that Dr. Ricketts, "belongs to the small corps of American physicians and scientists who are achieving distinction for their scientific research in the origin and course of disease. Dr. Ricketts represents the universities in this corps, having been associated for several years with the University of Chicago. It would be a great pity, indeed, if he should be cut off before his promising career had reached even its prime." The Chicago *Tribune,* May 6, in an editorial entitled "On the Firing Line," said: "The death of Dr. Howard T. Ricketts adds another name to the long honor roll of science. The endless warfare that mankind has fought against ignorance and its child, disease, has claimed another victim, but the fight goes on. Dr. Ricketts left his unfinished investigations to his fellow workers in the field of medical research. But he left something much more precious to his fellow men—the example of a high courage and devotion in the cause of humanity. Dr. Ricketts died on the firing line of human progress, and it is inspiring to believe, as we may, that he did not die in vain. Mankind is richer for his living and nobler for his dying." To the personal friends of Dr. Ricketts the news of his death will bring in an unusual degree a sense of personal loss. Quiet, modest, unassuming, he had a singularly lovable disposition and a capacity for friendship beyond the average. The friends of his college days and intimate associates of his years of teaching and research had anticipated for him a long and brilliant career, and unite in deploring the sudden termination of a life of usefulness and promise.

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J. HOLZER BINDERY

